

Exhibit 21

Page 1

1 UNITED STATES DISTRICT COURT

2 DISTRICT OF NEW JERSEY

3
4 -----
5 IN RE: JOHNSON & JOHNSON MDL NO.:
6 TALCUM POWDER PRODUCTS 16-2738 (MAS)(RLS)
7 MARKETING, SALES PRACTICES,
8 AND PRODUCTS LIABILITY
9 LITIGATION
10 -----

11
12 EXPERT DEPOSITION OF13 ANN G. WYLIE, PHD
1415
16 Monday, June 24, 202417 8:58 a.m. Eastern Time
18
19
20
21
22

23 Reported by: Denise Dobner Vickery, CRR, RMR

24 JOB NO.: 6754009

Page 2

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Monday, June 24, 2024

8:58 a.m. Eastern Time

Expert Deposition of ANN G. WYLIE,
PHD, held at the offices of:

SKADDEN ARPS SLATE MEAGHER & FLOM LLP
The Washington Building
1440 New York Avenue NW
Washington, DC 20005

Pursuant to notice, before Denise
Dobner Vickery, Certified Realtime Reporter,
Registered Merit Reporter, and Notary Public in
and for the District of Columbia.

1 APPEARANCES:

2
3 For MDL PLAINTIFFS (Via Zoom):

4 COHEN PLACITELLA & ROTH

5 BY: CHRISTOPHER M. PLACITELLA, ESQ.

6 BY: ERIC S. PASTERNAK, ESQ.

7 BY: DREW M. RENZI, ESQ.

8 127 Maple Avenue

9 Red Bank, NJ 07701

10 732.747.9003

11 cplacitella@cpirlaw.com

12 epasternack@cpirlaw.com

13 wukzmin@cpirlaw.com

14
15
16 For MDL Plaintiffs:

17 ASHCRAFT & GEREL LLP

18 BY: MICHELLE A. PARFITT, ESQ.

19 1825 K Street NW, Suite 700

20 Washington, DC 20006

21 202.759.7648

22 mparfitt@ashcraftlaw.com

Page 4

1 APPEARANCES:

2
3 For MDL PLAINTIFFS (Via Zoom):

4 BEASLEY ALLEN

5 BY: LEIGH O'DELL, ESQ.

6 218 Commerce Street

7 Montgomery, AL 36103-4160

8 308.874.3186

9 leigh.odell@beasleyallen.com

10
11
12 For DEFENDANTS JOHNSON & JOHNSON AND JOHNSON &
13 JOHNSON CONSUMER INC.:

14 KING & SPALDING LLP

15 BY: KEVIN HYNES, ESQ.

16 1185 Avenue of the Americas

17 New York, NY 10036

18 212.790.5349

19 khynes@kslaw.com

Page 5

1 APPEARANCES :

2
3 For PERSONAL CARE PRODUCTS COUNCIL (PCPC)
4 (Via Zoom) :

5 REILLY MCDEVITT & HENRICH PC

6 BY: KEVIN KOTCH, ESQ.

7 3 Executive Campus, Suite 310

8 Cherry Hill, NJ 08002

9 856.317.7180

10 kkotch@rmh-law.com
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Page 6

INDEX

EXAMINATION OF ANN G. WYLIE, PHD	PAGE
BY MR. PLACITELLA	7

DEPOSITION EXHIBITS

NUMBER	DESCRIPTION	PAGE
EXHIBIT 1	Small Binder with tabs: Wylie February 25, 2019 Report; Wylie April 9, 2024 Report; Wylie May 3, 2024 Report. Front Pocket is Corrected Figure 21 Associated with Tabs 2 and 3	113

(Exhibit 1 attached to transcript.)

REFERENCED EXHIBITS

NUMBER	PAGE
EXHIBIT 6.2 May 30, 2024 Expert Report of Ann G. Wylie	24

1 P R O C E E D I N G S

2 - - -

3 ANN G. WYLIE, PHD

4 called for examination, and, after having been
5 duly sworn, was examined and testified as
6 follows:

7 - - -

8 EXAMINATION

9 - - -

10 BY MR. PLACITELLA:

11 Q. Good morning, Dr. Wylie. How are
12 you today?

13 A. Fine. Thank you.

14 Q. We're here today for purposes of
15 taking your deposition. This is the second
16 deposition that was taken of you in these MDL
17 proceedings.

18 Did you have the opportunity to
19 review your prior transcript before coming here
20 today?

21 A. Several weeks ago I looked at it.

22 Q. Okay. And did you have any changes
23 or concerns about what was in your prior
24 transcript?

1 A. No.

2 Q. Okay. Can you tell us what
3 materials you specifically reviewed in preparation
4 for today's deposition.

5 A. Are you asking me about what I
6 reviewed from my report or --

7 Q. No.

8 A. -- what I reviewed for being here
9 today?

10 Q. For the deposition today.

11 A. Oh. I just looked over my reports.

12 Q. So you looked at nothing else?

13 A. No, not specifically for -- no.

14 Q. Okay. And who did you meet with in
15 preparation for today's deposition?

16 A. Kevin Hynes.

17 Q. Anyone else?

18 A. No.

19 Q. Did you speak with anyone else in
20 preparation for this deposition?

21 A. Yes. Let's see. What was the name?
22 What's the name? These names have gone out of my
23 head. The other lawyer that was here on Zoom when
24 we were here the other day for deposition.

Page 9

1 I can't remember.

2 Q. You don't remember who that was,
3 whether it was --

4 A. I'll think of it in just a minute.
5 He has twin sons.

6 Q. Let me see if I can change the form.

7 A. (Laugh). What's his name?

8 MS. PARFITT: That should be
9 identifiable.

10 MR. HYNES: Do you want me to
11 just remind you of the name?

12 THE WITNESS: That would be
13 helpful.

14 MR. HYNES: John Ewald.

15 THE WITNESS: Yes, John Ewald.
16 Sorry. His name just went out of my
17 head.

18 BY MR. PLACITELLA:

19 Q. Okay. Well, we won't tell John you
20 can't remember.

21 A. Please don't. (Laugh).

22 Q. How much time do you think you spent
23 preparing for today's deposition?

24 A. Subsequent to writing the report?

1 Subsequent?

2 Q. Yes. Yes, ma'am.

3 A. Two or three, four hours.

4 Q. And how long did you take to prepare
5 your report?

6 A. I don't remember exactly. I
7 provided invoices that give the number of hours.

8 Q. Okay. Since the last deposition
9 that you gave, have you ever tested any Johnson &
10 Johnson product to determine whether it contains
11 asbestos?

12 A. No.

13 Q. Have you ever tested any Johnson &
14 Johnson product to determine whether it contains
15 asbestos?

16 A. I've looked at a couple of samples
17 on my -- for myself, not for anyone.

18 Q. And when you say you looked at a
19 couple of samples, when did you do that?

20 A. Well, let's see. I did -- I did one
21 before the last deposition, I think, and I did one
22 between then and now. I used a sample that I
23 purchased at the grocery store for -- as
24 background material for the study I was doing for

1 ASTM and, of course, I looked at the material for
2 that purpose.

3 Q. And when did you purchase that
4 sample at the grocery store?

5 A. It was right after Johnson & Johnson
6 announced they were no longer going to be selling
7 it in the United States.

8 Q. Okay. So after they said they
9 weren't going to sell it, you were still able to
10 buy it on the shelf --

11 A. The next day.

12 Q. -- at the grocery store?

13 A. Yes, the next day.

14 Q. And did you ever provide the results
15 of your analysis to Johnson & Johnson or its
16 attorneys?

17 A. No.

18 Q. Why not?

19 A. It's not part of what I was doing
20 with them -- for them.

21 Q. Have you ever asked them to test any
22 of the samples at issue in this case?

23 A. No.

24 Q. Why not?

Page 12

1 A. It's not what I'm here to do.

2 Q. When you tested the Johnson &
3 Johnson -- do you have the results of your testing
4 for the -- of the Johnson & Johnson product?

5 A. No.

6 Q. Did you record the result?

7 A. No.

8 Q. What testing methods did you use
9 when you were looking at the Johnson & Johnson
10 product?

11 A. Polarized light microscopy.

12 Q. And when specifically was that test
13 done?

14 A. One of them I looked at in around
15 2018. That was a sample that I -- that I had
16 given to the University of Maryland that came out
17 of my personal collection.

18 And the other one would have been,
19 you know, sometime -- I'm not all that good on
20 dates. I'm sorry. I would say 20 -- 2000,
21 2001 -- 21. 2020, 2021, something like that. I
22 don't really remember exactly.

23 Q. And did you create any record in
24 terms of photomicrographs or anything of those

1 tests?

2 A. There's a photomicrograph that I
3 took of the -- in 2018 of a tremolite fragment
4 that's in the talk that I gave to the FDA at
5 JIFSAN, and you have those pictures.

6 Q. Did you ever use PLM -- well, when
7 you did your own test of a Johnson & Johnson, was
8 it baby powder?

9 A. Yes.

10 Q. When you tested the Johnson &
11 Johnson baby powder, did you look to determine
12 whether or not it contained chrysotile asbestos?

13 A. When I was going to use it as a
14 background material to spike that I was doing for
15 some ASTM testing of material, I did look at the
16 material to see if I could find serpentine in it
17 of any type.

18 I didn't do an extensive study, but
19 I did look at it, yes.

20 Q. When you said you didn't do an
21 extensive study, but you did look at it, what do
22 you mean by that?

23 A. Well, I mean, I wasn't -- my purpose
24 in it was just to determine if I could see

1 anything in there and I made several mounts, but I
2 didn't, you know, I didn't find anything.

3 Q. Did you follow all the methodologies
4 and standards that are set forth in your report at
5 issue in this case when you looked at the Johnson
6 & Johnson for serpentine using PLM?

7 A. Yes. There wasn't anything to look
8 at. So I would have had I found any serpentine.
9 I would have definitely used all of the methods,
10 yes. I would have attempted to apply them all.
11 You can't always do that.

12 Q. Okay. Did you ever try to use TEM
13 in looking at the Johnson & Johnson samples?

14 A. No.

15 Q. Why not?

16 A. I wasn't engaged to do TEM analyses.

17 Q. Isn't it your opinion in this
18 report, however, that TEM should be done in
19 addition to PLM if you're looking for chrysotile
20 asbestos in Johnson's Baby Powder?

21 A. Yes.

22 Q. But you didn't do that yourself when
23 you were doing your own testing?

24 A. I wasn't really testing it. I just

Page 15

1 looked to see if I could find serpentine and I
2 didn't by PLM.

3 Q. Right.

4 But under your own standards in your
5 report, in order to have a definitive conclusion,
6 you would have had to use TEM, correct?

7 A. I was not -- my -- my goal here was
8 simply to make sure that I didn't see a lot of
9 serpentine in there. It would be an interference
10 that -- and I didn't. I was not analyzing this
11 for anyone. I was looking at it for myself.

12 Q. So do you use a different scientific
13 method when doing testing for yourself versus
14 being paid by someone?

15 MR. HYNES: Objection to form.
16 Argumentative.

17 THE WITNESS: No, but I didn't
18 use TEM and I wouldn't.

19 BY MR. PLACITELLA:

20 Q. But you did put in a report for two
21 different courts that the standard methodology you
22 would use is to any time you use PLM also use TEM,
23 correct?

24 A. Any time I -- only -- only if I am

1 trying to authenticate the presence of chrysotile.
2 If I want to confirm it, I would certainly use
3 TEM. If I have a whole amount of chrysotile under
4 the microscope, I don't need the TEM to go and
5 confirm that if I have nothing but chrysotile
6 under the microscope. So it's not always the
7 case.

8 But if you're trying to find a small
9 amount of chrysotile at very, very low levels, the
10 TEM would be a reliable way to do that, especially
11 when the optical properties are inconsistent with
12 chrysotile.

13 Q. So when you yourself purchased
14 Johnson's Baby Powder and did your own analysis,
15 you did not use TEM, correct?

16 A. No, I didn't.

17 Q. Okay. Did you consult anyone else
18 in preparation for the report at issue today?

19 A. No.

20 Q. Did anyone supply you with any
21 materials in order to assist you in preparing your
22 report in this case?

23 MR. HYNES: Vague.

24 THE WITNESS: Other than --

Page 17

1 and I was supplied the MAS reports, if
2 that's what you're asking me.

3 BY MR. PLACITELLA:

4 Q. Is that -- that's the only thing you
5 were supplied?

6 A. Yes.

7 Q. Now, you issued two different
8 reports. One for the federal litigation and one
9 for the state court litigation, correct?

10 A. That's correct.

11 Q. And what's the difference between
12 the two reports?

13 A. The second report has more examples
14 and an appendix. I added an appendix to that, and
15 I also added a table that gives the data from the
16 MAS analyst sheets. I just compiled some of that
17 data into a table.

18 Q. Are your opinions any different from
19 one report to the other?

20 A. No.

21 Q. And why is it that you thought it
22 was important to amend your reports when you
23 issued the second report?

24 MR. HYNES: Objection to form.

Page 18

1 THE WITNESS: I just thought
2 maybe some more examples would be
3 helpful.

4 BY MR. PLACITELLA:

5 Q. But I noticed in your report there
6 were actual language changes in the report.

7 Why did you make language changes in
8 the report in addition to finding more examples?

9 MR. HYNES: Vague.

10 THE WITNESS: I don't know
11 really to what you're referring, but the
12 first report was written very quickly and
13 I may have tried to -- made a few
14 grammatical changes here and there, but
15 nothing substantive other than what I
16 just described.

17 BY MR. PLACITELLA:

18 Q. Why was it that the first report was
19 issued very quickly?

20 A. Well, I was asked to provide it on a
21 Friday and I provided it on a Tuesday, the
22 following Tuesday. I didn't have much time.

23 Q. So they were -- J&J gave the
24 materials on a Friday and you provided a final

1 report on a Tuesday?

2 MR. HYNES: Misstates
3 testimony.

4 You can answer.

5 THE WITNESS: No. I was asked
6 to give -- make a formal report on a
7 Friday, but I had received the MAS
8 reports in the time preceding that.

9 BY MR. PLACITELLA:

10 Q. Have you ever used PLM to identify
11 chrysotile asbestos in cosmetic talc other than
12 Johnson & Johnson talc?

13 A. No.

14 Q. Have you ever analyzed a cosmetic
15 talc product other than Johnson & Johnson to
16 determine whether it contained any form of
17 asbestos?

18 A. No.

19 Q. So as you sit here today, the only
20 testing you ever did of -- of cosmetic talc to
21 determine if it contained asbestos was the two
22 samples that you did on your own that you bought
23 off the shelf; is that fair?

24 A. I think that's probably true.

Page 20

1 Certainly that's all that I have in my memory in
2 terms of products.

3 I mean, over the years, early
4 particularly in '70s and '80s, I was sent a lot of
5 materials. For all I know, they were used in
6 cosmetic talc. I really didn't know, but they
7 weren't out of a bottle or a product or, you know,
8 something I could identify as being having been
9 sold to anyone.

10 Q. So in terms of your qualification
11 before a court, if asked by a judge, you would say
12 other than the two tests that you did on your own,
13 you have no recollection of ever conducting a
14 single test on cosmetic talc using any method to
15 determine if it contains asbestos, correct?

16 MR. HYNES: Form.

17 THE WITNESS: Cosmetic talc
18 products, please.

19 BY MR. PLACITELLA:

20 Q. Sorry?

21 A. Cosmetic talc products. In other
22 words, they're identified as a consumer product.
23 That would be correct.

24 Q. Okay. Have you test any industrial

1 talc products to determine if it contained
2 asbestos to date?

3 A. Yes, many.

4 Q. Okay. And what were the sources of
5 that industrial talc?

6 A. Well, mostly they came to me from
7 companies that wanted to know if there was
8 asbestos in the materials they were going to use.
9 This was in the '70s and '80s. There were a few
10 labs that could do it, and they were -- did not
11 want to put asbestos in anything they were using.
12 So they wanted to be sure their products were --
13 were free of asbestos.

14 Q. Did you ever test any talc,
15 industrial talc or any talc, for that matter, from
16 any of the mines that Johnson & Johnson used to --
17 to manufacture Johnson's Baby Powder?

18 A. I don't know.

19 Q. Did you ever test any talc from any
20 Vermont mine?

21 A. Yes.

22 Q. What Vermont mine?

23 A. I don't know.

24 Q. Do you have a record of that?

1 A. No.

2 Q. When you do the testing, do you --
3 when you did the testing historically of
4 industrial talc, did you keep records of that
5 testing?

6 A. At the time, yes.

7 Q. And what happened to those records?

8 A. Well, I threw them all away when I
9 had to close up my -- most of my university
10 activities.

11 Q. Okay. And when did you throw them
12 all away?

13 A. 10, 12 years ago.

14 Q. When you did the testing of the
15 Vermont talc, to your recollection, what testing
16 method did you use?

17 A. Polarized light microscopy.

18 Q. Did you ever use TEM?

19 A. No.

20 Q. Did you believe at the time that you
21 did the testing of Vermont talc that TEM was --
22 was the gold standard for determining ultimately
23 whether there was asbestos in the Vermont talc?

24 A. Sorry, but I would disagree with you

Page 23

1 that it's the gold standard. It would be so for
2 chrysotile, but not necessarily said for
3 amphibole.

4 Q. Okay. So is it your opinion that
5 TEM is the gold standard for determining whether
6 there's chrysotile in Vermont talc?

7 A. I would say that you need both. My
8 position would be that I would always look at
9 everything by polarized light microscopy first.
10 You see much more of the sample. If there's
11 amphibole there, you can always see it.

12 The only thing you couldn't see any
13 polarized light microscopy were individual fibrils
14 of chrysotile, and you can't see those. Fibril
15 bundles you would be able to see.

16 If there's ambiguity in the PLM
17 analysis, then TEM would be -- that's the way I
18 would proceed, that TEM would be the place I would
19 go.

20 Q. So -- so we're just clear on your
21 opinion, you cannot see individual chrysotile
22 fibrils using PLM, correct?

23 A. That's correct.

24 Q. So if they exist, you would need to

1 look at that under TEM, correct?

2 A. Only if they exist independently of
3 others. If they're in groups --

4 Q. Okay.

5 A. -- you would be able to see them.

6 Q. If they exist independently, they
7 are not identifiable under PLM, but they are
8 identifiable under TEM.

9 Is that your testimony?

10 A. Yes.

11 Q. Okay. I want to go to -- hold on
12 one second.

13 I have your MDL report, which I've
14 marked as Wylie Exhibit 6.2 and I'm blowing up for
15 you.

16 A. Oh, yeah.

17 MR. HYNES: Chris, for
18 purposes of the record, is that the May
19 report you're referring to?

20 MR. PLACITELLA: Correct.

21 MR. HYNES: Thank you.

22 THE WITNESS: Okay.

23 MR. HYNES: And which page was
24 that?

Page 25

1 MR. PLACITELLA: Okay. I'm
2 curious. The view that the reporter is
3 using, is everyone seeing? I'm trying to
4 understand what view is being used just
5 to maximize the --

6 MR. HYNES: Yeah, we can see.

7 MR. PLACITELLA: -- your
8 ability to see.

9 MR. HYNES: Your boxes -- your
10 speaker box is pinned and so you are the
11 largest image on the screen, and we see
12 essentially -- I'll describe this.

13 We see your face in the top
14 left, and then we see a document --

15 MR. PLACITELLA: Okay.

16 MR. HYNES: -- to your right
17 with a callout taking up a majority of
18 the screen.

19 MR. PLACITELLA: Okay. So you
20 have no problem seeing the callout,
21 correct?

22 MR. HYNES: Correct.

23 BY MR. PLACITELLA:

24 Q. Okay. Just for curiosity purposes,

Page 26

1 you have a computer in front of you, Dr. Wylie.

2 A. (Nods head).

3 Q. What's on that computer?

4 A. Just exactly what he described,
5 Kevin described.

6 So I see you in the upper left-hand
7 corner. I see a version of the whole page, which
8 I can't read because it's not clear. And then I
9 see an insert with larger writing and the
10 paragraph beginning "Another polarizer."

11 Q. Okay. So in 6.2, which is your May
12 report, you say that:

13 "Although not depicted in Figure 1,
14 if a tungsten light source is utilized, a blue
15 filter should be added above it."

16 Do you see that?

17 A. Yes.

18 Q. Is that statement published in any
19 standard, or is that just your opinion?

20 MR. HYNES: Objection. Form.

21 THE WITNESS: It's part of
22 the proper techniques for polarized light
23 microscopy, and it's very well-described
24 in Bloss's books.

1 BY MR. PLACITELLA:

2 Q. I'm sorry. In what?

3 A. Bloss, Donald Bloss. "Introduction
4 to the Methods of Optical Crystallography" by
5 Donald Bloss. Bloss published --

6 Q. Okay.

7 A. You want me to keep going?

8 There's two versions.

9 Q. And what proof do you have that that
10 was not done here?

11 A. I have no proof.

12 My reason I brought it up is because
13 the coloring in some of the pictures appear to be
14 a little bit more orange than I would have
15 expected them to be and a little bit on the red
16 side, and so I thought perhaps -- I gave two
17 possibilities -- either the voltage wasn't turned
18 up all the way possibly, or there was no blue
19 filter in the system. And I don't really know. I
20 mean, that -- it was just a suggestion.

21 Q. Regardless of that statement, you
22 were able to reach conclusions based on the
23 information that was provided to you concerning
24 the presence or absence of asbestos in the

1 material that was provided, correct?

2 A. I was, yes, uh-huh.

3 Q. Okay. And you did not comment
4 anywhere in your report about the type of light
5 bulb used changing your opinions or conclusions,
6 correct?

7 A. No, that's correct.

8 Q. Okay. On page 6.4, you list a
9 number of properties that you believe are
10 significant in using the polarized microscope in
11 evaluating the samples for the presence of
12 asbestos, correct?

13 A. They're important for identifying
14 the presence of the identity of an unknown.

15 Q. What do you mean by that?

16 A. A mineral whose identity you don't
17 know.

18 Q. Okay. Well, do all qualified
19 experts use all 11 properties every time they
20 examine a sample of cosmetic talc to determine
21 whether there's asbestos in the talc using
22 polarized light microscopy?

23 MR. HYNES: Vague. Overbroad.

24 Calls for speculation.

Page 29

1 THE WITNESS: I have no idea.

2 BY MR. PLACITELLA:

3 Q. Do you use all 11 properties every
4 time you examine a sample --

5 MR. HYNES: Overbroad.

6 BY MR. PLACITELLA:

7 Q. -- to determine if there's
8 chrysotile asbestos in the sample?

9 MR. HYNES: Same objection.

10 THE WITNESS: These are the
11 properties that help you identify an
12 unknown mineral, and that's -- that's the
13 set of properties that are available.

14 You can't always obtain all of
15 these properties. It depends on the
16 particle size. The issue would be, did
17 you attempt to try to look at some of
18 them.

19 I mean, for example, not all
20 minerals display dispersion of the optic
21 axis and not all minerals would you
22 necessarily be able to get a proper
23 orientation, even if you could obtain an
24 interference figure, such that you could

1 evaluate the dispersion of the optic
2 axis.

3 But sometimes the dispersion
4 of the optic axis is an extremely
5 important variable in telling one mineral
6 from the other.

7 You know, there are 5,000
8 different minerals, and you need a lot of
9 different qualities of these and
10 properties if you have a material whose
11 identity you do not know.

12 So that these are the
13 properties that I teach my students in
14 using the polarized light microscope.
15 These are the properties that are
16 described for every mineral in every
17 reference book for optical mineralogy.
18 They're all given, and so that you can
19 evaluate them and should attempt to
20 evaluate them if you have an unknown.

21 In the analysis of building
22 materials for asbestos, of course they do
23 not do all of these materials because
24 they have a set of -- they have a

Page 31

1 material in which things have only -- are
2 only there because they were added, and
3 so you kind of know that they needed to
4 be a commodity in order to be there.

5 So it's not -- you don't have
6 the world of 5,000 minerals to choose
7 from among. But nonetheless, if you have
8 an unknown, you certainly should --
9 should attempt to look at these and
10 determine that if you think there's
11 chrysotile that they are consistent with
12 that.

13 BY MR. PLACITELLA:

14 Q. Well, let me ask the question this
15 way.

16 In analyzing cosmetic talc for the
17 presence of chrysotile asbestos, do you use every
18 one of these 11 properties in making your
19 analysis?

20 A. I'm not an analyst, as you know. I
21 look at materials for their characteristics, for
22 the presence of asbestos, and of course I try to
23 identify the minerals that are present.

24 So I will attempt to determine as

Page 32

1 many of these as I can if I have a material that
2 whose identity I don't know always.

3 Q. Let me ask the question again.

4 When you're evaluating materials,
5 specifically cosmetic talc, for the presence of
6 chrysotile asbestos, do you use each and every one
7 of these properties?

8 MR. HYNES: Asked and
9 answered.

10 THE WITNESS: I don't do
11 routine analysis of cosmetic talc. I'm
12 -- if I have a cosmetic talc and it has
13 an unknown material in it, of course I
14 will attempt to use all of these
15 properties.

16 BY MR. PLACITELLA:

17 Q. When is the last time you used all
18 of these properties in evaluating a talc sample to
19 determine whether or not it has asbestos?

20 A. I'm not an analyst. I don't do
21 analysis at this point in my life, as you know.

22 So the last time I -- I mean, when I
23 was looking and studying industrial talcs,
24 whatever talcs people would send me in the '70s

Page 33

1 and '80s, I always used all -- as many of these as
2 I can measure.

3 Q. Am I -- is it a subjective judgment
4 call as to what properties you should be looking
5 at in a particular sample to determine whether
6 there's chrysotile asbestos in that sample?

7 A. No.

8 MR. HYNES: Object.

9 BY MR. PLACITELLA:

10 Q. Is it your opinion that, regardless
11 of your criticism of what properties were
12 considered, Dr. Longo's method produced enough raw
13 data for you to determine whether the talc sample
14 contained chrysotile?

15 A. Yes.

16 Q. So regardless of your criticism, the
17 methodology used by Dr. Longo produced enough raw
18 data for you to exercise your own professional
19 judgment to determine whether that data
20 demonstrated if there was asbestos or not in the
21 Johnson's Baby Powder, correct?

22 MR. HYNES: Object to form.

23 THE WITNESS: Perhaps I
24 should say this again.

Page 34

1 These properties are used to
2 identify what is there, not to identify
3 what's not there, in a sense.

4 So there is sufficient
5 information provided in his reports to
6 let me know that he did not have material
7 that were consistent with the optical
8 properties of chrysotile.

9 BY MR. PLACITELLA:

10 Q. So let me -- just so the record is
11 clear.

12 Regardless of your criticism on this
13 part of your report, Dr. Longo -- the methods
14 Dr. Longo used generated enough sufficient raw
15 data for you as an independent scientist to
16 determine whether, in your opinion, that that
17 product contained chrysotile asbestos.

18 True?

19 MR. HYNES: Objection to form.

20 THE WITNESS: He provided a
21 lot of raw data, and that data was
22 sufficient for me to determine that they
23 were -- the data were inconsistent with
24 chrysotile. Not what they -- not what

Page 35

1 the material is necessarily, but they
2 were inconsistent with chrysotile.

3 BY MR. PLACITELLA:

4 Q. And that's based upon your
5 independent professional judgment and experience,
6 correct?

7 A. Correct.

8 Q. Okay. Is there any published
9 literature or standard that states that when
10 looking at chrysotile -- when looking at cosmetic
11 talc, when analyzing cosmetic talc, you should
12 look at every one of these properties when using
13 PLM to determine if that product contains
14 chrysotile asbestos?

15 MR. HYNES: Asked and
16 answered.

17 THE WITNESS: I'm not sure
18 what's different about what you're asking
19 me.

20 Are you asking me about all
21 the formal methods that are out there?
22 Or what are you asking me?

23 BY MR. PLACITELLA:

24 Q. I'm asking you whether there is any

Page 36

1 published literature that states that when looking
2 at a sample of cosmetic talc to determine whether
3 it has -- contains chrysotile asbestos, you should
4 evaluate each and every one of these properties.

5 MR. HYNES: Same objection.

6 THE WITNESS: I don't think
7 there are any standards specifically for
8 cosmetic talc, but maybe there are and
9 I'm not aware of them.

10 So the answer is, I guess, I
11 don't know.

12 BY MR. PLACITELLA:

13 Q. Okay. I want to go to -- and I'm
14 going to skip around your report because really
15 the purpose of this deposition is just to better
16 understand the substance of your report. Okay?

17 So I'm not going to ask you about
18 every little thing, just things that...

19 On page 6.5, you talk about
20 recommendations for using different oils, correct?

21 A. I don't think he's got the same
22 thing I have here. It looks like he has a
23 different.

24 Okay. I'm sorry. "Instead of the

Page 37

1 recommended two or three." Yes. Okay. Uh-huh.

2 Q. Okay. And you cite to a specific
3 article for that proposition, correct?

4 A. A book.

5 Q. Oh, that's a book?

6 A. It's a book.

7 Q. Okay. Are there any government or
8 ASTM standards that require the two or three
9 different oils when making this kind of
10 evaluation?

11 A. What do you mean by "this kind of
12 evaluation"?

13 Q. Evaluating and looking at the sample
14 -- the information that's produced here to
15 determine whether there was chrysotile in cosmetic
16 talc.

17 A. Again, I don't think there are any
18 standards specifically for cosmetic talc.

19 Are there any analytical standard
20 approaches that are specific for cosmetic talc?

21 Q. That's what I'm asking you.

22 A. Well, I'm not a professional
23 analyst. So I'm not aware of any standard -- any
24 standard methods for the analysis of cosmetic talc

1 that have been published by ASTM.

2 Q. Okay.

3 A. I mean, maybe there are. I'm just
4 not aware of them.

5 Q. On page 6.8, you state --

6 A. Okay.

7 Q. -- "For all minerals and oils, the
8 'index of refraction' on the label or in reference
9 texts."

10 Do you see that?

11 A. Yes.

12 Q. What reference texts are you
13 referring to?

14 A. All books that mineral --
15 mineralogical books that give optical information
16 on minerals, and that can be from general books in
17 the Deer/Howie assessment series, Bloss's books,
18 Phillips and Revell, the optical properties of
19 minerals, mineralogy texts. Any kind of
20 mineral -- any kind of text that provide
21 information on the index of refraction of minerals
22 is what I am referring to there.

23 Q. Okay. Now, in your report, you
24 criticize Dr. Longo in various contexts about the

1 number of mineral oils used.

2 You recall that?

3 A. I made a comment to the effect that
4 if he had measured in more than one oil, he would
5 have had a better shot at getting a correct answer
6 for the index of refraction at the D line.

7 Q. Okay. Well, that's what I'm trying
8 to understand.

9 Because don't you say here in this
10 page that is up on the screen that he used two
11 oils?

12 A. Yes, he did, but the problem with
13 the two -- and I analyzed the two and demonstrated
14 that they showed you that the index of refraction
15 was much higher than he concluded. Because he did
16 have two oils and I was able to, you know, take
17 advantage of that.

18 But it still leaves uncertainty when
19 they are far away from the D line. So you're much
20 better off if you have one on one side and one on
21 the other, and that's a little bit why I said two
22 or three.

23 You know, if you had 1.550, 1.552,
24 and 1.554 you wouldn't really gain much

Page 40

1 information. So you need to have the three oils
2 that are a little bit further apart, and one on
3 one side of the D line and one on the other would
4 be ideal. That's the way I taught my students.

5 Q. Okay. That's what I'm trying --
6 that's what I'm trying to understand.

7 Because early in your report you
8 said he only used one oil, here you said he used
9 two oils, and then elsewhere in your report you
10 said he used three oils.

11 So I'm trying to understand what
12 your criticism is.

13 A. He never used --

14 MR. HYNES: Objection to form.

15 BY MR. PLACITELLA:

16 Q. Did he use one, two, or three oils?

17 MR. HYNES: Objection to form.

18 THE WITNESS: He never used
19 three oils. He used only 1.550 and
20 1.560, as far as I know.

21 But he didn't record and
22 compile information together. In order
23 to really use dispersion staining
24 properly, you have to look at what you

Page 41

1 found, the colors in one -- in one oil
2 and you have to look at how -- what you
3 found in the other oil.

4 And you have to put those
5 together to produce a dispersion for the
6 mineral so you can accurately determine
7 the index of refraction at the D line.

8 BY MR. PLACITELLA:

9 Q. Okay. So when you say early on he
10 only used one oil, was that a mistake?

11 MR. HYNES: Objection to form.
12 Misstates testimony.

13 THE WITNESS: I don't
14 understand what you mean by "mistake."

15 He only used one oil in any of
16 his analyses. Sometimes it was 1.550 and
17 sometimes it was 1.560, but he never used
18 in a single study both oils at the same
19 time and compiled the dispersion staining
20 colors from the two in such a way that he
21 would learn more about the index of
22 refraction of the material he was using.

23 BY MR. PLACITELLA:

24 Q. Okay. Let me just take a little

1 deeper dive on that.

2 So I'm going to page 6-10, Exhibit
3 6.10, which is page 10 on your report.

4 A. Yes.

5 Q. Okay. In this, you see the section
6 that's up on the screen, Dr. Wylie?

7 A. Yes, uh-huh.

8 Q. It says:

9 "In some of the MAS optical data
10 sheets, specific values for the parallel and
11 perpendicular to elongation are provided; in
12 others, one can only estimate the value."

13 You see that part?

14 A. Yes, uh-huh.

15 Q. Okay. And so was a comparison done?

16 A. I'm sorry. I don't understand. Did
17 he do --

18 Q. Well --

19 A. -- a comparison between his 1.55?

20 Q. Yeah.

21 A. Well, he made some interesting
22 comments about how the different oils affected his
23 results, but he never used the two together to
24 augment his -- at least nothing I saw. I don't

1 know actually how he went from his dispersion
2 staining color to his index of refraction without
3 two oils but -- so I don't know whether I've
4 answered your question.

5 Q. You don't know exactly what he did?

6 A. No, I don't know what he did. I
7 don't know what he did, no.

8 Q. Okay. And you do say:

9 "In some of the MAS optical data
10 sheets."

11 You see that sentence there?

12 A. Yes. Yes.

13 Q. So his optical data sheets were
14 sufficient for you to draw your own conclusions;
15 is that fair?

16 A. Well, okay. So let's make sure that
17 we're talking about the same thing.

18 In his optical data sheets, he gave
19 a lambda zero parallel and he gave a lambda zero
20 perpendicular, and those information that he
21 provided not in all of the optical data sheets
22 actually, only on some. And there were a couple
23 in which he had them for every particle, but there
24 were some that he only had them for one particle.

Page 44

1 I mean, it was -- it was not always present.

2 But those were not two oils. I
3 mean, I'm a little confused. Those were parallel
4 and perpendicular in a single oil, and he gives
5 the lambda zero for those.

6 Q. But my question to you is: He
7 generated enough raw data here using the
8 methods -- his methods for you to draw your own
9 independent conclusion?

10 A. Yes, that's correct.

11 Q. Is that correct?

12 A. Yes, that is correct.

13 Q. Okay. All right. So the
14 methodology that he used in generating the data
15 was sufficient for you to exercise your own
16 independent judgment and provide your own
17 opinions, correct?

18 MR. HYNES: Form.

19 THE WITNESS: He -- by and
20 large, I would say that was correct. It
21 was -- he gave me enough information to
22 know that I did not understand how he was
23 utilizing dispersion staining to obtain
24 the data that he obtained.

Page 45

1 So if that's what you're
2 asking me, the answer is yes.

3 BY MR. PLACITELLA:

4 Q. Okay. And let me just go down a
5 little bit further.

6 The next paragraph you say:

7 "I would note that they are a bit
8 more orange than I would expect."

9 Do you see that section?

10 A. Yes.

11 Q. Okay. And does the fact that the
12 dispersion staining colors are a bit more orange
13 than you would expect, did that prevent you from
14 drawing conclusions based upon the data provided?

15 A. It didn't matter in this case
16 because all of the particles are the same strange
17 orange. So the talc particles are also a bit more
18 orange than I would have expected.

19 So, no, I was able to draw that
20 conclusion.

21 Q. But based upon the methodology that
22 Dr. Longo used to generate the data he did, you
23 were able to exercise your own expert opinions and
24 draw your own conclusions, correct?

Page 46

1 MR. HYNES: Form.

2 THE WITNESS: I was able to
3 draw my own conclusions about the
4 similarity of color, even though it was
5 strange, among all the particles, yes.

6 BY MR. PLACITELLA:

7 Q. Okay. And, in fact, you say:

8 "What is clear, however, is that all
9 particles that have the same dispersion staining
10 colors."

11 You state that, correct?

12 A. Correct.

13 Q. All right. So to me that implies
14 that you had enough information -- when you say
15 "what is clear" that you had enough information
16 from the data that was generated to draw your own
17 independent opinions, correct?

18 A. It's clear, yes. Particles had the
19 same dispersion staining colors and, therefore,
20 the same lambda zeros and, therefore, the same
21 index of refraction at lambda zero, yes.

22 Q. So I want to go to figure -- page
23 6.11.

24 A. Okay.

1 Q. Can you see that?

2 A. Yes.

3 Q. Now, this is a -- this is a -- I
4 don't want to characterize it.

5 What is this in front of you?

6 A. It's a dispersion -- central-stop
7 dispersion staining microphotograph.

8 Q. Okay. In this picture, the
9 methodologies used to create this picture were
10 sufficient for you to draw your own independent
11 judgment about what this picture shows, correct?

12 A. Yes.

13 Q. Okay. And what colors are you
14 seeing in this picture?

15 A. Well, I'm seeing various shades of
16 orangey-yellow and I'm seeing shades of blue/light
17 blue color. I see two basic colors.

18 Q. Did you -- did you need to look
19 under the microscope itself in order to conclude
20 that you disagreed with Dr. Longo?

21 A. About what?

22 Q. About what this demonstrates, what
23 this shows.

24 Is the picture enough, or did you

Page 48

1 have to go -- did you need to look under the
2 microscope yourself in order to come to the
3 conclusion?

4 A. In this case, the pictures are quite
5 clear.

6 Q. So if someone took the position in a
7 court that in order for Dr. Wylie to make a
8 determination she had to look in the microscope
9 itself, that would be incorrect?

10 MR. HYNES: Argumentative.

11 BY MR. PLACITELLA:

12 Q. Correct?

13 MR. HYNES: Overbroad.

14 THE WITNESS: It would have
15 -- if I had been sitting with him, I
16 would have asked him a lot of questions,
17 I can tell you that, that would have
18 perhaps clarified for me how he got the
19 information that he did.

20 So this picture is clear
21 enough for me to conclude that the
22 particle that is labeled as chrysotile
23 has essentially the same dispersion
24 staining colors as the particles that are

Page 49

1 talc and that I don't need to go to the
2 microscope to see that.

3 BY MR. PLACITELLA:

4 Q. What questions would you have asked
5 him as you were sitting next to him?

6 A. Well, I would have asked -- I would
7 have loved to have looked at the light source to
8 understand why the particles appear so much more
9 orange. I would have liked to have known that.
10 I would have liked to know at what
11 temperature this picture was taken. There's no
12 indication of the temperature in many of the
13 samples. I can't remember in this one in
14 particular, I have to say, but in many of his
15 pictures there's no temperature. So that changes
16 the indices of refraction a little bit.

17 So those kinds of questions.

18 But fundamentally, the particle
19 that's labeled here has the same indices of
20 refraction as the other particles in that field,
21 unless they're the blue ones, but the orange ones,
22 and I would not need to go to the microscope to
23 determine that that was true.

24 Q. Okay. I'm going to go to 6.12.

Page 50

1 Can you see that?

2 A. Yes.

3 Q. Okay. Does this picture provide you
4 -- does the method that Dr. Longo used to generate
5 this picture provide you enough information to --
6 to exercise your own independent judgment as to
7 what this picture demonstrates?

8 A. How I would interpret it, I can
9 interpret -- I can interpret this photograph, yes.

10 Q. Okay. And what -- what colors do
11 you see in this photograph?

12 A. Well, I see various shades of
13 yellow, a little bit of blue.

14 I'm looking at my hard copy because
15 it's a little bit bigger, but it's the same
16 picture. I'm just looking over here.

17 So that's what I see.

18 Q. And do different scientists based
19 upon their training and experience often see
20 differences in colors when they're looking at a
21 photograph like this?

22 MR. HYNES: Calls for
23 speculation. Overbroad. Vague.

24 THE WITNESS: I have no idea

Page 51

1 what other people would see. My -- my --
2 I don't know.

3 BY MR. PLACITELLA:

4 Q. Okay.

5 A. I don't see why they would.

6 Q. Well, part of what -- when you're
7 looking at a photo like this, part of what you
8 bring to this photograph is your years of
9 experience and judgment, correct?

10 A. That would be correct.

11 Q. So somebody with less experience
12 and -- excuse the phrase -- years of experience
13 might see something different in terms of color?

14 A. I have no idea. I don't see why
15 but...

16 Q. Let's go to 6.13.

17 Now, 6.13, what colors do you see
18 there?

19 A. I see a blue, a bright bluish -- sky
20 bluish color, and I see a yellowish golden,
21 yellow.

22 Q. Okay.

23 A. Yes, yellowish-golden.

24 Q. Give me a second here.

Page 52

1 In your commentary to this photo,
2 you talk about a -- is this a third oil or a
3 second oil?

4 A. This is 1.560.

5 Q. Okay. And is this oil recognized by
6 experts as an oil that will help provide
7 scientific data?

8 MR. HYNES: Vague. Overbroad.
9 Calls for speculation.

10 THE WITNESS: (Laugh). I
11 mean, yeah, I can't answer that question.
12 Please be a little more specific.
13 Provide information about --

14 BY MR. PLACITELLA:

15 Q. Have you ever used the 1.560 oil --

16 A. Sure.

17 Q. -- in your analysis --

18 A. Yes. Yes.

19 Q. -- to the D line? Okay.

20 A. Yes. Yes.

21 Q. Go to 6.14.

22 On page 614, you state:

23 "Our first conclusion from Figure 7
24 is that talc and 'chrysotile' are not

Page 53

1 distinguished from each other by MAS by dispersion
2 staining colors."

3 Do you see that?

4 A. Yes.

5 Q. What do you mean -- who's "our"?
6 What do you mean by "our"?

7 A. It should have been "my." I don't
8 know. Sounds like a teacher. Sounds like I was
9 in my teacher mode. (Laugh).

10 Q. Okay. So no one else was assisting
11 you when you were doing this?

12 A. No. No.

13 Q. Okay. You indicate, and I blew it
14 up here:

15 "In my opinion, the colors in
16 Figures 7a and 7b are indicative of a mineral with
17 an index of refraction closer to 1.586 parallel to
18 elongation."

19 You see that?

20 A. Yes.

21 Q. Okay. So am I correct that the
22 methodology used by Dr. Longo provides sufficient
23 data for you to reach the conclusion?

24 MR. HYNES: Form.

Page 54

1 THE WITNESS: I also need --
2 needed information about the dispersion
3 of the mineral, as I think I discuss
4 later on.

5 But the talc is 1.586. So
6 around plus or minus .002 I think maybe.
7 So that's what I was basically utilizing.

8 The indices of refraction are
9 the same as the talc. If the talc is
10 around 1.586, 1.585, then they are closer
11 to talc.

12 BY MR. PLACITELLA:

13 Q. So you used your judgment and
14 experience and concluded that the index of
15 refraction at the D line is closer to 1.586 than
16 1.566, correct?

17 A. Yes.

18 Q. All right. But you recognize that
19 others could disagree with your conclusion,
20 correct?

21 A. I doubt it, no.

22 MR. HYNES: Calls for
23 speculation.

24 BY MR. PLACITELLA:

Page 55

1 Q. No one else disagrees?

2 A. Well, clearly Dr. Longo disagrees,
3 but remember that 1.586 is the index of refraction
4 of talc.

5 So what I'm really -- and I go
6 through the analysis a little bit later, and I
7 used the dispersions possibilities for both talc
8 and chrysotile to extrapolate from the observation
9 of a lambda zero in 1.560 or 1.550 to the index of
10 refraction at the D line.

11 So what I'm speaking about here is
12 that the indices of refraction are closer to talc,
13 and I don't think that any student that I've ever
14 taught would disagree with the fact that when the
15 indices of refraction are the same, the dispersion
16 staining colors are the same.

17 Q. Am I correct it is based on your
18 professional judgment you believe in looking at
19 the colors in the D line that it's closer to 1.586
20 than 1.566?

21 A. I agree. Yes, I do.

22 Q. Okay. I'm going to page 6.17 of
23 your report.

24 You indicate on 6.17 of your report

1 that:

2 "These indices of refraction would
3 not correspond to indices of refraction required
4 for chrysotile."

5 Correct?

6 A. That -- yes, that's what it says.
7 Yes.

8 Q. Okay. And, again, you disagree with
9 Dr. Longo based on the same data that he generated
10 and the scientific method that he employed,
11 correct?

12 A. I do not know what scientific method
13 he employed, frankly. As I told you before, I
14 don't know how he extrapolated from the
15 observation in the 1.550 or 1.560 to the D line.
16 I don't know how he did that.

17 Q. Okay.

18 A. So I don't -- I can't.

19 Q. So you're not offering an opinion on
20 that?

21 A. No.

22 Q. All right. So what you can state
23 that you disagree with Dr. Longo based upon the
24 data that he generated that you were able to

1 observe, correct?

2 A. That's correct.

3 Q. Okay. I'm going to the next page
4 6.18.

5 You indicate -- I'm just looking at
6 the last highlighted sentence.

7 By the way, does this indicate he
8 was looking at two oils?

9 A. No.

10 Q. So it's your opinion he's only
11 looking at one oil?

12 A. My opinion? He states it on every
13 photograph what oil he was in.

14 Q. Okay. And you state:

15 "We can use the dispersion staining
16 colors MAS reports parallel to elongation in
17 Series E oils 1.550 and 1.560 to test the
18 hypothesis that the dispersion of the particles
19 identified as chrysotile is very small, without
20 knowing the mineral or assuming its dispersion."

21 Did you write that?

22 A. Yes.

23 Q. Okay. And you conclude that you're
24 still able to use the dispersion staining oils of

Page 58

1 1.550 and 1.560 to reach conclusions that disagree
2 with MAS, correct?

3 MR. HYNES: Vague.

4 THE WITNESS: Yes. I can use
5 the information I obtained from the two
6 oils to demonstrate that the dispersion
7 of the mineral under question is small,
8 and that's what I did.

9 I don't know that -- that
10 Dr. Longo would disagree or agree with
11 me. He never commented on the
12 relationship between the two oils, other
13 than to say something about the
14 birefringence changing from one oil to
15 the other.

16 BY MR. PLACITELLA:

17 Q. Okay. I'm on page 6.20.

18 A. Okay.

19 Q. You say:

20 "When the mineral is examined in two
21 different oils, it is clear also that the
22 MAS-reported indices of refraction are
23 inconsistent with the data provided."

24 Correct?

1 A. That's correct.

2 Q. So you were able to look at the
3 results from two different oils, make a comparison
4 and draw your own conclusions --

5 A. That's --

6 Q. -- correct?

7 A. That's correct.

8 Q. Okay. And that was based upon
9 methods that were used by Dr. Longo in generating
10 the data you rely upon, correct?

11 MR. HYNES: Form.

12 THE WITNESS: I was using the
13 raw data that he provided, yes.

14 BY MR. PLACITELLA:

15 Q. And you have no problem with the raw
16 data, the method he used to generate that raw
17 data, do you?

18 MR. HYNES: Form. Vague.

19 THE WITNESS: Well, other than
20 the strangeness of the light
21 illumination, I would say that's correct.

22 BY MR. PLACITELLA:

23 Q. Okay. Even with the strange light,
24 that didn't interfere with your making your own

Page 60

1 independent judgment and offering your own
2 opinions on what the raw data showed, correct?

3 A. That's correct.

4 Q. Going to page 6.24.

5 You indicate -- and I've highlighted
6 it:

7 "It is common practice among optical
8 mineralogists when observing particles immersed in
9 oils to 'tap the slide' to encourage particles to
10 rotate along -- around the long axis and to change
11 orientation."

12 Do you see that?

13 A. Yes.

14 Q. And do you have any evidence that
15 was not done in this case?

16 A. I have no evidence that it was done,
17 no.

18 Q. One way or the other?

19 A. One way or the other.

20 Q. That practice, is that published in
21 any standard or text?

22 A. I have no idea.

23 Q. Page 6.26. You state on page 6.26:

24 "The assertion by MAS that the

Page 61

1 variations it observed are due to chemical
2 variability is not supported by chrysotile from
3 any other source and is directly contradicted by
4 the data of McCrone."

5 You see that?

6 A. Yes.

7 Q. What data of McCrone are you
8 referring to?

9 A. He has a table that provides the
10 lambda zeros parallel and perpendicular to
11 chrysotile from many, many locations throughout
12 the world.

13 Q. Is that -- and what specific
14 publication should I look at if I wanted to go see
15 what you were referring to?

16 A. Well, there's two. One of them he
17 wrote a paper. I didn't actually use that one. I
18 used "The Particle Atlas" for that information. I
19 think that's the name of it. I referenced it.

20 Q. Okay. And you go on to say:

21 "It is my opinion that the particles
22 are talc, not chrysotile, and variations are due
23 to orientation."

24 You see that?

1 A. Yes.

2 Q. First of all, what do you mean by
3 "due to orientation"?

4 A. Well, I discussed it in the report.
5 Certain materials, certain minerals, depending on
6 how they are oriented on the slide, will change a
7 lot of their properties depending upon
8 orientation.

9 The indices of refraction will range
10 within limits. The extremes are set but -- by
11 chemistry, but within limits they will vary
12 according to the orientation. And you could see
13 that if you -- you could see that.

14 Q. Okay. And so what you're indicating
15 is that, based on your opinion, particles are talc
16 and not chrysotile, and that's based upon your
17 independent judgment relying upon the materials
18 Dr. Longo supplied to you, correct?

19 A. That's correct.

20 Q. I'm going to page 6.30 of your
21 report where it talks about Calidria.

22 Let me know when you're ready.

23 A. I'm ready.

24 Q. Okay. You say:

Page 63

1 "The optical data MAS has presented
2 for the Coalinga chrysotile is not for chrysotile
3 at all."

4 You see that?

5 A. Yes.

6 Q. What do you mean by that?

7 A. It means that the indices of
8 refraction that are consistent with the dispersion
9 stain and colors of the material that he
10 identifies are not consistent with the chrysotile
11 from Coalinga.

12 Q. Okay. And what's the basis for that
13 statement?

14 A. McCrone's data on Coalinga. My own
15 observations of Coalinga.

16 Q. So you have -- yourself have
17 analyzed Coalinga under a microscope?

18 A. Yes.

19 Q. Okay. And when is the last time you
20 did that?

21 A. It says it right there. The first
22 sentence in this that you've got up there.

23 I looked at Coalinga about six
24 months ago maybe.

1 Q. And what was the source? Where did
2 you get that from?

3 A. In my collection.

4 Q. In your collection?

5 A. At the University of Maryland's --

6 Q. Where did it come from?

7 A. -- collection.

8 Sorry. I'm sorry to interrupt you.

9 The University of Maryland's
10 collection.

11 Q. Do you know when that Coalinga that
12 you analyzed came into possession of the
13 University of Maryland?

14 A. 1978.

15 Q. So how do you know that's consistent
16 with what came out, for example, in 1995 for the
17 same mine?

18 A. Well, of course I don't, and the
19 deposit could vary to some extent depending upon
20 where they were mining it. So it's not -- there
21 could be variations in the trace minerals, but
22 there isn't any variation that I have seen
23 indicated for the chrysotile itself.

24 Q. You don't know whether the Coalinga

Page 65

1 that Dr. Longo was preparing to stain was the same
2 that you had previously analyzed, do you?

3 A. No.

4 Q. How big is that Coalinga mine? Do
5 you know?

6 A. No.

7 Q. Do you know what -- would the
8 properties potentially change based upon the depth
9 from which the sample is taken?

10 A. I don't know. I know nothing about
11 the mine, no.

12 There is a description of the mine
13 that suggests there's lateral variation in some of
14 the trace minerals, but that's the only thing that
15 I know.

16 Q. Okay. On 6.30 and 6.31 you talk
17 about temperature. You mentioned that before.

18 You see at 6.31 you say:

19 "Measurement and correction for
20 temperature is standard procedure in optical
21 mineralogy, yet there is no indication if or how
22 temperature corrections were made in the MAS
23 reports."

24 You see that?

1 A. Yes.

2 Q. Okay. Do you have any evidence that
3 the temperature variation would have influenced
4 your interpretation of a material that you were
5 provided?

6 MR. HYNES: Form.

7 THE WITNESS: No.

8 BY MR. PLACITELLA:

9 Q. Okay. By the way, you don't have
10 any evidence this was not done in this case,
11 correct?

12 MR. HYNES: Form.

13 THE WITNESS: No. It isn't
14 indicated anywhere. And the pictures are
15 labeled oil 1.550, and if the temperature
16 is 21, it's not 1.550, it's 1.552.

17 So I guess I would have
18 expected some commentary somewhere, but
19 it's possible they were making these
20 temperature corrections and I just didn't
21 know it.

22 BY MR. PLACITELLA:

23 Q. All right. But regardless of your
24 comment about temperature, you were still able to

1 take the materials that were generated by
2 Dr. Longo and draw your own independent opinions,
3 correct?

4 A. Yes. I assumed that he was
5 operating at 21 degrees.

6 Q. I want to go to 6.35.
7 See, I'm getting through this fast,
8 right?

9 A. Yeah.

10 Q. All right. You indicate on page
11 6.35 that:

12 "In the reports, MAS says it heated
13 the samples but the temperatures given are
14 variable, and include 400C, 425C, 480C, and 400F.
15 It is not clear why MAS does not follow the
16 recommendations of the ISO method."

17 Do you see that?

18 A. Yes.

19 Q. What ISO method are you referring to
20 and why do you say they're not followed?

21 A. There's a discussion in the ISO
22 method -- and, I'm sorry, I don't remember the
23 numbers -- 222 something or the other where it
24 talks about the importance of heating samples in

Page 68

1 advance of analysis to temperatures that would
2 remove organic components that, you know, a piece
3 of cotton or a bat piece, whatever, anything like
4 that. And it's very explicitly stated in there
5 the temperature that should go to 480C. As I
6 recollect 480. I don't have it in front of me,
7 but it recollects it very clearly.

8 Q. Okay. And what I'm trying to
9 understand is: Regardless of this comment, you
10 were still able to take the data that was
11 generated using the methodology employed by
12 Dr. Longo and reach your own independent opinions,
13 correct?

14 A. That's correct.

15 Q. So whether or not he followed the
16 recommendations of ISO, you were given enough
17 information to draw your own independent
18 conclusion that disagreed with Dr. Longo, correct?

19 A. That's correct.

20 MR. HYNES: Form. Overbroad.

21 THE WITNESS: That's correct.

22 BY MR. PLACITELLA:

23 Q. Okay.

24 A. I mean, pretty correct.

Page 69

1 Q. You indicate further down -- by the
2 way, whenever you want to take a break, just let
3 me know. I'm trying to power through this but...

4 A. Okay.

5 Q. So we've been going now about an
6 hour and 15 minutes. You want to keep going or do
7 you want to take a couple minutes?

8 MR. HYNES: You want to take
9 five?

10 THE WITNESS: Five minutes.

11 MR. PLACITELLA: Sure.

12 MR. HYNES: I'll be right
13 back.

14 THE COURT REPORTER: Off the
15 record at 10:15 a.m.

16 (Recess.)

17 THE COURT REPORTER: Back on
18 the record at 10:23 a.m.

19 BY MR. PLACITELLA:

20 Q. All right. I'm still on page 6.35
21 of your report.

22 You indicate:

23 "Unless size reduction alters the
24 atomic structure of the material, which is

Page 70

1 unlikely if grinding is done under liquid nitrogen
2 as described, indices of refraction and associated
3 dispersion staining colors will not change."

4 You see that?

5 A. Yes.

6 Q. Do you know what the grinding
7 process was for the Johnson's Baby Powder?

8 A. That MAS used?

9 Q. Well --

10 A. Are we talking about MAS --

11 Q. Yes.

12 A. -- use --

13 Q. Yeah.

14 A. -- or what's used in the mine?

15 I'm not sure I --

16 Q. Let's start with MAS.

17 A. I think he -- I think he said a ball
18 mill, but I'm not -- he might have said a disc
19 mill. I can't remember exactly. He said he used
20 liquid nitrogen, but he didn't give the length of
21 time for the milling.

22 Q. Okay. Does that matter?

23 A. Yes.

24 Q. Why does that matter?

Page 71

1 A. Well, if you, you know, mill
2 something for 10 hours in a ball mill, you might
3 damage it. It's very mineral-specific,
4 time-specific, temperature-specific,
5 sample-specific. So I don't know for sure.

6 Q. Okay. You also indicate:

7 "Ball milling can be destructive to
8 the atomic structure of minerals if it persists
9 for many hours, but details of this 'study' are
10 not provided."

11 Do you need that information in
12 order to reach a conclusion in this case?

13 A. MAS seems to indicate that by
14 milling, the indices of refraction have changed.
15 That's not possible unless the atomic structure of
16 the mineral has been destroyed in the milling
17 process. So either he's incorrect or he has --
18 it's no longer what he thinks it is because the
19 atomic structure has been destroyed.

20 Q. So are you familiar with the ball
21 milling process that Johnson & Johnson uses at the
22 mine in order for it to create the end product?

23 A. No.

24 Q. Does the ball milling process have

1 the capacity to change the ability to detect
2 chrysotile asbestos in the final product by PLM?

3 A. Well, that's a very interesting
4 question. (Laugh). I'm not sure that I know the
5 answer to that.

6 I guess my instinct would say that
7 would be no, but I'm not familiar enough to be
8 able to answer specifically.

9 Q. Well, could you -- could the ball
10 milling process grind the fibers down to a size
11 that PLM would not pick it up?

12 A. I don't think so, no.

13 Q. Okay. And what's your basis for
14 that statement?

15 A. Well, mineral products that come out
16 of mines are almost always ground by one milling
17 process or the other in ball mills, rod mills.
18 And, generally speaking, the milling process in
19 the mining as part of mining has no impact on the
20 indices of refraction of the material.

21 Q. So the index of refraction will not
22 change regardless of particle size.

23 Is that your testimony?

24 A. That's correct.

1 Q. You indicate at the bottom of 6.35:
2 "Chrysotile fibrils are most readily
3 identifiable by transmission electron microscopy
4 (TEM).

5 And then you go on to explain that.
6 Do you see that?

7 A. Yes.

8 Q. You then say:
9 "Why MAS did not use TEM to confirm
10 the presence of chrysotile in all samples is not
11 clear."

12 You see that?

13 A. Yes.

14 Q. You go on to say:
15 "Were I concerned about the presence
16 of chrysotile, I would certainly use TEM and not
17 light microscopy."

18 Correct?

19 A. Yes.

20 Q. But you never did that yourself
21 ever --

22 A. I'm not --

23 MR. HYNES: Objection to form.

24 BY MR. PLACITELLA:

Page 74

1 Q. -- correct?

2 MR. HYNES: Objection to form.

3 THE WITNESS: I'm not an
4 analyst. I don't do commercial analysis.

5 BY MR. PLACITELLA:

6 Q. Well, did you ever have an analyst
7 work for you --

8 A. No.

9 Q. -- and did you give them direction?

10 A. No.

11 Q. So when you say you're not an
12 analyst, then you're not capable of doing this?

13 A. No. I'm --

14 MR. HYNES: Objection to form.

15 Objection. Argumentative.

16 THE WITNESS: No. I don't --
17 I don't do it routinely.

18 But if I were concerned about
19 the presence of chrysotile and there was
20 ambiguity in the optical information,
21 certainly I would confirm it by TEM
22 because it's such an easy confirmation.

23 BY MR. PLACITELLA:

24 Q. But -- but you never did that in the

Page 75

1 samples that you analyzed for -- of Johnson &
2 Johnson's baby powder, correct?

3 MR. HYNES: Objection to form.

4 THE WITNESS: I testified to
5 you that I looked at two samples of
6 Johnson & Johnson's baby powder that were
7 part of the University of Maryland's
8 collection. I didn't -- and I did not
9 use TEM. I used only polarized light
10 microscopy.

11 But I wasn't concerned --

12 BY MR. PLACITELLA:

13 Q. By the way --

14 A. -- about the presence of chrysotile.

15 Q. By the way, did Johnson & Johnson
16 ever supply you with the TEM analysis of their
17 product that was done by McCrone?

18 MR. HYNES: Objection to form.
19 Overbroad.

20 THE WITNESS: No.

21 BY MR. PLACITELLA:

22 Q. Were you aware before today that
23 McCrone conducted a TEM analysis on various
24 Johnson & Johnson talc samples?

Page 76

1 A. Well, I think five years ago when
2 you took my deposition, you put a bunch of
3 analyses in front of me. I don't remember whether
4 they were -- where they were from. So I'm
5 assuming that's what you're referring to.

6 So the answer would be yes because
7 you told me.

8 Q. Okay. So since the deposition and
9 in preparation the last deposition, and this
10 report, Johnson & Johnson still has never given
11 you any of the McCrone test results, correct?

12 A. Correct.

13 Q. And you didn't think it was
14 important to look at the McCrone TEM test results
15 when criticizing Dr. Longo's report, correct?

16 MR. HYNES: Form.

17 THE WITNESS: That's
18 irrelevant.

19 BY MR. PLACITELLA:

20 Q. If McCrone found -- well, we'll do a
21 little of that a little later.

22 Now, a couple of weeks ago, I saw
23 you at the hearing in Middlesex County, New Jersey
24 where Dr. Longo was testifying.

Page 77

1 Do you recall that?

2 A. Yes.

3 Q. All right. And that was before
4 Judge Viscomi?

5 A. Yes. Take your word for it.

6 Q. Yeah.

7 And what was your role at that
8 hearing? Why were you there?

9 MR. HYNES: Vague.

10 THE WITNESS: I was there to
11 listen to Dr. Longo.

12 BY MR. PLACITELLA:

13 Q. What was -- but what role did you
14 play?

15 You weren't there for your own
16 information, correct?

17 A. Well, partly, you know. I wanted to
18 be sure that I would hear -- hear him what I
19 thought he was saying in his written reports.

20 Q. Okay. So you paid your own way to
21 go there?

22 A. No. No.

23 Q. You paid -- were you compensated for
24 your time being there?

1 A. I haven't billed it.

2 Q. Do you anticipate being compensated
3 for your time being there?

4 A. Probably.

5 Q. Okay. And I saw you sitting next to
6 Dr. Su.

7 Do you recall that?

8 A. Yes.

9 Q. And what was his function there?

10 A. You'll have to ask him.

11 Q. You have no idea?

12 A. I assume he was there for the same
13 reasons I was there, but I don't know.

14 Q. Well, did Johnson & Johnson ask you
15 to go there?

16 A. Yes.

17 Q. Oh. And --

18 A. Excuse me. They asked me if I
19 wanted to go. Those were the exact words. Did I
20 want to go.

21 Q. And did you help -- you saw
22 Mr. Dubin asking Dr. Longo questions?

23 A. I did.

24 Q. Did you meet with Dr. -- with

Page 79

1 Mr. Dubin at all in reference to the testimony
2 that Dr. Longo provided?

3 A. I had dinner with him but, no,
4 wasn't specific. It was a social dinner.

5 Q. So you had no substantive
6 conversations with Mr. Dubin about the testimony
7 that Dr. Longo was being provided?

8 A. No. I had dinner with him the night
9 before I heard anything from Dr. Longo.

10 Q. Okay. So you never debriefed with
11 J&J after Dr. Longo testified?

12 A. Debriefed.

13 Q. Yeah.

14 Did you talk to J&J about what
15 Dr. Longo testified about?

16 A. I don't think we actually probably
17 did discuss that much.

18 Q. And I was observing. I didn't see
19 you take any notes.

20 You didn't take any notes in
21 relation to the testimony given by Dr. Longo?

22 A. No.

23 Q. Is there anything that Dr. Longo
24 said that concerned you?

Page 80

1 MR. HYNES: Objection to form.

2 Vague.

3 THE WITNESS: Concerned me
4 about? You mean about what he was
5 concluding?

6 BY MR. PLACITELLA:

7 Q. Yes.

8 A. Well, he was saying things that I
9 don't think are true.

10 Q. What did Dr. Longo testify to that
11 you disagreed with?

12 A. He talked about the change in index
13 of refraction with particle size. I heard that,
14 which I was astounded.

15 And he talked about seeing vague --
16 small amounts of color that no one else could see
17 in the dispersion staining colors. He said he
18 would see a little red or something, and I didn't
19 -- I didn't understand that.

20 Q. Anything else?

21 A. He talked about the use of the
22 Michelle Levy chart and he didn't use it, and I
23 thought that was strange. He understood it and
24 said that, I think, 90 percent of people do use

Page 81

1 it, but he doesn't, and I thought that was
2 interesting. He didn't explain why, but I thought
3 that was sort of unusual.

4 That's all I can remember right at
5 this moment.

6 Q. Okay. Is it fair to say that there
7 were opinions offered by Dr. Longo during that
8 testimony that you did not agree with?

9 A. That would be correct.

10 Q. Okay. Can you tell me what
11 methodology Dr. Longo used in order to reach his
12 opinions that you disagreed with?

13 A. I don't know what methodology he
14 used.

15 MR. HYNES: Form.

16 THE WITNESS: He observed a
17 dispersion staining color in a single
18 oil. I do not know what methodology he
19 used to move from that observation to a
20 determination of the index of refraction
21 at the D line. There is no methodology
22 described for doing that, and I don't
23 know what he did.

24 BY MR. PLACITELLA:

Page 82

1 Q. All right. So you're not here to
2 give an opinion on the methodology that Dr. Longo
3 used in reaching his conclusion, correct?

4 A. I --

5 MR. HYNES: Objection to form.

6 Overbroad.

7 BY MR. PLACITELLA:

8 Q. You're here to testify that you
9 disagree with the conclusions based upon the data
10 that he generated, correct?

11 MR. HYNES: Objection to form.

12 Overbroad. Misstates testimony.

13 THE WITNESS: Yes. No, I
14 think that's not exactly correct. I
15 mean, I've commented that he should have
16 -- the methodology that he used was
17 incorrect.

18 It was -- he didn't look at
19 any of the optical properties of the
20 material he was calling chrysotile. He
21 didn't measure the indices of refraction.
22 I'm sorry. He didn't get a dispersion
23 staining color in more than one oil to
24 inform him.

Page 83

1 He did not provide information
2 on the way he extrapolated from an
3 observation in an oil to get to the value
4 at the D line.

5 So I think his method --
6 methodology is flawed.

7 BY MR. PLACITELLA:

8 Q. The method that he used to generate
9 the data that you draw your opinions on, was there
10 a problem with that methodology?

11 MR. HYNES: Form. Asked and
12 answered.

13 THE WITNESS: I just
14 described to you the problem of the
15 methods that he was using.

16 He gave enough information in
17 his raw data for me to determine that the
18 conclusions that he has drawn were
19 inconsistent with what I saw in the raw
20 data.

21 The method that he used for
22 going from the raw data to his
23 conclusions are not clear, and they were
24 not stated. They're not described. I

Page 84

1 don't know how he did that.

2 So I can only -- you know, I'm
3 going to criticize the methodology in
4 that regard because it's absent from his
5 papers. I don't know what he did.

6 BY MR. PLACITELLA:

7 Q. So you can't comment on the exact
8 validity of his methodology one way or another
9 because you don't know what it was.

10 Is that what you're saying?

11 MR. HYNES: Objection to form.

12 THE WITNESS: Yes, I can
13 comment because I can use independent
14 data and apply the data -- the raw data
15 that he provided, and I come to different
16 conclusions.

17 BY MR. PLACITELLA:

18 Q. All right. That's fair.

19 So he used sound methodology in
20 order to provide data that you can rely upon to
21 come to a different conclusion; is that fair?

22 MR. HYNES: Objection to form.

23 THE WITNESS: I'm not going
24 to allow you to put the word "sound" in

Page 85

1 there because I've told you there's
2 issues with the light sources that I
3 don't understand and issues with not
4 using temperature, not putting his
5 samples through the high temperature
6 recommended by ISO.

7 There's things that he didn't
8 do. So.

9 BY MR. PLACITELLA:

10 Q. Well, we went through all that. I'm
11 not going to do that again.

12 A. Okay.

13 Q. So let me ask the question once.
14 Okay?

15 A. Yes.

16 Q. The methodology that he used was
17 adequate enough for you to draw your own
18 independent conclusions based upon the data that
19 was generated; is that fair?

20 MR. HYNES: Form.

21 Argumentative. Asked and answered.

22 THE WITNESS: I think that's
23 fair.

24 BY MR. PLACITELLA:

1 Q. Okay. Did you discuss with Dr. Su
2 the testimony of Dr. Longo?

3 A. Not exactly discussion. I think we
4 both expressed dismay at hearing what we heard.

5 Q. Well --

6 A. But we did not discuss it in detail:
7 He said this. What does this mean. We did not
8 discuss it in detail.

9 Q. So did you discuss it at the
10 courthouse, outside the courthouse, on the phone?
11 When did you discuss it?

12 A. At the courthouse.

13 Q. Okay. And do you know if Dr. Su
14 ever looked at your report?

15 A. I think he has it, but I don't know
16 whether he looked at it or not.

17 Q. Did you ever look at Dr. Su's
18 report?

19 A. I did.

20 Q. And by the way, did Dr. Su -- did
21 you have any problem when you were talking to
22 Dr. Su understanding what he was saying to you?

23 A. Generally, no. Occasionally a word
24 here and there. Generally, no.

Page 87

1 Q. Did he have any understanding -- a
2 problem understanding what you were saying to him?

3 A. I don't think so.

4 Q. Did you disagree with anything that
5 Mr. Dubin was suggesting to the court?

6 MR. HYNES: Objection to form.
7 Vague.

8 THE WITNESS: I can't answer
9 that question. I don't know what
10 Dr. Su --

11 BY MR. PLACITELLA:

12 Q. Well, do you remember when Mr. Dubin
13 was taking the PowerPoint and changing the colors
14 on the PowerPoint during his examination of
15 Dr. Longo?

16 A. I do.

17 Q. Okay. Is that a proper scientific
18 method to employ when analyzing a sample?

19 MR. HYNES: Objection to form.
20 Vague.

21 THE WITNESS: He wasn't
22 analyzing a sample. He was simply
23 illuminating a photograph.

24 BY MR. PLACITELLA:

Page 88

1 Q. So would you do -- is that something
2 you would do, change the color for the photograph
3 to make a point before a court?

4 MR. HYNES: Objection to form.
5 Argumentative.

6 THE WITNESS: I saw no change
7 of color. I saw only change of
8 intensity.

9 BY MR. PLACITELLA:

10 Q. So that's something you would do
11 before a court? You would take an original
12 scientific document, and then you would change the
13 color before the court in order to make a point?

14 MR. HYNES: Objection.
15 Argumentative.

16 THE WITNESS: (Laugh). I
17 wouldn't be there. (Laugh). I'm not a
18 lawyer.

19 BY MR. PLACITELLA:

20 Q. Well, is that -- is that proper do
21 you think to go to a court and change the colors
22 of an original scientific document and suggest
23 that it shows something different?

24 MR. HYNES: Objection.

Page 89

1 Argumentative. Assumes facts.

2 THE WITNESS: He didn't
3 change the colors. He changed the
4 intensities.

5 BY MR. PLACITELLA:

6 Q. Okay. Was that okay by you?

7 A. Well, the problem we have is that
8 what we have is printed pictures, and so they are
9 not the raw -- they aren't the negatives. So I
10 don't know whether it's proper or improper. You
11 know, if you had the negatives, then perhaps you
12 would be able to determine.

13 If you've ever worked with
14 photography, you know you can change the image by
15 the length of time that you expose and all those
16 other things.

17 So I can't really comment on whether
18 it's proper or not. You know, it didn't change
19 the colors. It only changed the intensity. So I
20 don't see a violation of scientific principle
21 there, but maybe you could enlighten me. (Laugh).

22 Q. With all due respect, I'm asking you
23 to enlighten me.

24 Do you plan on going before Judge

Page 90

1 Viscomi or the MDL judge and changing the
2 intensity of the color in order to make your
3 point?

4 MR. HYNES: Objection to form.

5 THE WITNESS: I do not.

6 BY MR. PLACITELLA:

7 Q. You indicated a number of times in
8 your report that you would require TEM testing to
9 verify the PLM results.

10 You recall that?

11 A. Yes.

12 Q. Okay. What specific TEM -- go
13 through the steps for me -- well, let's -- let's
14 back up.

15 You're given a sample of Johnson's
16 Baby Powder and you're going to test it under PLM.
17 Walk through the steps for me that you're going to
18 use in order to run that test to see if it has
19 chrysotile asbestos.

20 A. Chrysotile.

21 I would put it in an oil that
22 matched talc and that way -- match talc gamma and
23 beta, and in doing that, I would be able to see
24 much more clearly materials that do not have the

Page 91

1 same indices of refraction of talc. And they
2 would develop a high relief, and I'd be able to
3 see them.

4 If I wanted to know what their
5 identity was, I would do all those things on that
6 list of 11 or 12 in the beginning of my report to
7 see if I could get interference figures.

8 I would change the oils in the -- if
9 I found material that appeared to be fibrous,
10 let's just say for example, and I wanted to know
11 what it was, I would change the oils until I match
12 the oil in that material.

13 I would examine -- so that -- that
14 would be what I would do. Multi -- the multi-oil
15 approach.

16 Q. That's it?

17 A. If I'm looking for the presence of
18 chrysotile?

19 Q. Yes.

20 A. Yes, that would be what I would do.
21 I would -- I would -- let me -- let
22 me go back a little bit.

23 Chrysotile doesn't occur in
24 isolation. Chrysotile fibrils don't just appear,

Page 92

1 and so they are associated with other forms of
2 serpentine, other materials perhaps. And so I
3 would be looking for any possibility of
4 associations in the material to see if there was
5 any antigorite, lizardite, platy serpentine, that
6 sort of thing.

7 If I were going to court and I had
8 to prove the absence of something -- you know, you
9 can't prove the absence of something very well.
10 In fact, you can't prove the absence of anything,
11 scientifically speaking. You can assign a
12 detection limit.

13 So depending upon the detection
14 limit and the interest, if I was trying to prove
15 absolutely the absence of chrysotile, I would go
16 to TEM. Or if I were going to prove its presence,
17 I would go to TEM actually as a confirmation,
18 confirming approach.

19 Q. I just want to make sure I
20 understand your testimony from earlier.

21 Is it your opinion that if
22 chrysotile asbestos is present in cosmetic talc,
23 you will see it using PLM?

24 A. I didn't say that.

Page 93

1 Q. Okay. Well, let me back up then.

2 What are the circumstances that you
3 will not find chrysotile that's present in
4 cosmetic talc using PLM?

5 A. If the only thing that's present are
6 single chrysotile fibrils, you wouldn't see it.
7 Individual separated chrysotile fibrils, you would
8 not see it.

9 Q. Does the grinding or ball milling
10 process affect the ability to see the product in
11 bundle versus individual fibrils?

12 A. Well, that's a complicated question,
13 and I'm not sure that I can answer that so
14 generically. Nor do I have detailed -- I haven't
15 looked at any studies.

16 But my instincts would be to say no,
17 but I don't know for sure.

18 Q. You don't know?

19 A. I don't know for sure.

20 Q. So you can't -- you can't testify
21 within a reasonable degree of scientific certainty
22 one way or the other?

23 A. I think that's probably correct,
24 yes.

1 Q. So it is possible that the ball
2 milling process could cause any particular sample
3 to show fibrils versus a bundle depending on the
4 sample, correct?

5 MR. HYNES: Objection to form.

6 THE WITNESS: I don't know
7 that for sure. I don't know that -- I
8 don't believe that you can separate
9 chrysotile fibrils from each other so
10 that there are no bundles by any milling
11 process.

12 BY MR. PLACITELLA:

13 Q. Well, that's what I'm trying to
14 understand. Let me tease that out a little bit.

15 Do you believe there are
16 circumstances that you can find chrysotile fibrils
17 using TEM in cosmetic talc that you would not see
18 using PLM?

19 A. I think if it's a contamination, the
20 answer would be yes.

21 Q. When you say "contamination," what
22 do you mean by that?

23 A. I mean it was in the air in the lab
24 or it was contaminated by some other process, but

Page 95

1 it was not part of the ore to begin with. Then I
2 think, yes, I think you would not necessarily --
3 you might have chrysotile fibrils, a few here or
4 there, and you may not see it by polarized light.
5 You wouldn't see it.

6 Q. So you would disagree with McCrone's
7 conclusions then that found chrysotile asbestos in
8 Johnson's talc that they said there was no
9 evidence of contamination?

10 MR. HYNES: Objection to form.

11 Assumes facts.

12 THE WITNESS: I don't know
13 anything about that.

14 BY MR. PLACITELLA:

15 Q. Well, if that was the conclusion
16 reached by -- by McCrone in looking at Johnson's
17 talc, you would say McCrone is wrong?

18 MR. HYNES: Objection to form.

19 Assumes facts.

20 THE WITNESS: What year was
21 it?

22 BY MR. PLACITELLA:

23 Q. Does it the matter?

24 A. Yes.

1 Q. Why?

2 A. Because chrysotile contamination was
3 everywhere in the '60s and '70s and '80s. It was
4 in the air in every city. It was in the dust on
5 every road. It was on your clothes. It was in
6 the Antarctic ice. It was everywhere.

7 So it would make a lot of difference
8 on whether or not these analyses were done in the
9 '70s or '80s or '90s or whether they were done in
10 2020.

11 Q. Well, suppose this analysis was done
12 with blanks and the blanks didn't show anything?

13 MR. HYNES: Objection.

14 Assumes facts. Incomplete hypothetical.

15 THE WITNESS: The blanks
16 didn't show it.

17 BY MR. PLACITELLA:

18 Q. Okay. This is --

19 A. It could have been on the filters.

20 Q. -- what I understand.

21 A. It could have been in the water. It
22 could have been in a lot of places.

23 Q. All right. So tell me. It's been
24 five years since we took the deposition. I showed

Page 97

1 you some documents back then. The whole issue
2 here you say -- I think you mention in your report
3 the word "McCrone" 23 times in your report.

4 Is that accurate?

5 A. You counted them. Probably so.

6 Q. Okay. So why is it that you didn't
7 ask Johnson & Johnson for any of the McCrone
8 testing results from the products that you're
9 testifying about?

10 A. I'm not testifying about any
11 products whatsoever.

12 I'm talking -- I'm testifying about
13 a report and the techniques that were used in that
14 report and the conclusions that were drawn by the
15 report.

16 Q. All right. So you're not here to
17 testify one way or the other whether there is, in
18 fact, asbestos in Johnson & Johnson's talc,
19 correct?

20 A. Correct.

21 Q. You're not here to give any -- you
22 don't have any opinion one way or the other as to
23 whether Johnson & Johnson's talc is contaminated
24 with asbestos at the source mine, correct?

Page 98

1 MR. HYNES: Overbroad.

2 THE WITNESS: I see no
3 evidence to suggest that it is.

4 BY MR. PLACITELLA:

5 Q. That wasn't my question.

6 You're not here to provide any
7 testimony that the Johnson & Johnson talc or the
8 source mines were contaminated with asbestos or
9 not, correct?

10 A. It's not part of my report. So the
11 answer is yes, I am not here, or no, or whatever.
12 I'm not here to testify about that.

13 I'm testifying about the nature of
14 the methods and the conclusions that were drawn
15 from a set of analyses by MAS Laboratories.
16 That's it.

17 Q. So the entirety of your testimony in
18 this case is based upon your observations the
19 conclusion of the raw data that was generated by
20 Dr. Longo in his PLM analysis of the Johnson's
21 talc; is that fair?

22 MR. HYNES: Objection to form.
23 Overbroad.

24 THE WITNESS: Sounds right.

1 BY MR. PLACITELLA:

2 Q. Okay. And that would be the first
3 time that you disagree on the ultimate conclusions
4 or opinions based on raw data generated by a
5 scientist, correct?

6 MR. HYNES: Overbroad.

7 THE WITNESS: I think it is
8 probably the first.

9 BY MR. PLACITELLA:

10 Q. The first time?

11 A. Yeah. (Laugh).

12 Q. Okay. Now, you've been -- you've
13 been working with Johnson & Johnson on the -- on
14 the issue of testing using PLM testing methods for
15 cosmetic talc going back to the 1980s, right?

16 MR. HYNES: Object to form.

17 THE WITNESS: No.

18 BY MR. PLACITELLA:

19 Q. You never had interaction with
20 Johnson & Johnson going back to the 1980s about
21 what the proper methodology was for testing
22 cosmetic talc using PLM?

23 A. If you're getting at the ASTM work I
24 did in the '80s, that's an industry group. There

Page 100

1 may have been representatives from Johnson &
2 Johnson on that committee. I really don't know.
3 I think you've told me -- in fact, I think you
4 told me in 2019 that there was someone on there
5 from Johnson & Johnson.

6 And I think that you showed me a
7 letter that he had written about the development
8 of this method. I was working on the method for
9 ASTM. I wasn't a member of ASTM. I didn't go to
10 the committee meetings for ASTM.

11 They asked me if I would work on a
12 method for -- for detecting asbestos in talc
13 generally.

14 And so if that answers your
15 question, I think he did write me a letter, but I
16 really had no recollection of it. And I didn't
17 work for them, and I didn't interact with them as
18 a company.

19 Q. Well, they did ask you to change
20 your methodology in order to get the method they
21 wanted approved by the ASTM, didn't they?

22 MR. HYNES: Objection to form.

23 Assumes facts and incomplete
24 hypothetical. Calls for speculation.

Page 101

1 THE WITNESS: No.

2 BY MR. PLACITELLA:

3 Q. That never happened?

4 A. Not that I recollect.

5 Q. Okay. So I'm going to take 10
6 minutes and -- well, let me ask you some questions
7 before that. Just -- just so I'm clear about your
8 testimony.

9 Based upon your expertise -- I just
10 want to make sure I understand -- is it possible
11 to grind talc so finely that chrysotile asbestos
12 would not be detected by PLM?

13 A. Is it possible to do what so finely?

14 Q. Grind --

15 A. Oh, grind.

16 Q. -- the talc so finely that you can't
17 find chrysotile asbestos using PLM?

18 A. You know, absolutes are hard
19 statements to agree to when you haven't tested
20 them.

21 So I think the answer would be that
22 would be my inclination, but I can't for sure say
23 that. But that would be my inclination from what
24 I know about mineral processing and all the mines

1 I've visited, all the processing I've seen. I
2 don't think that ball mills will do that but, you
3 know, in the natural world, there are almost no
4 absolutes.

5 Q. Okay. But that's not an opinion
6 you're going to provide in this case?

7 A. No.

8 Q. One way or the other?

9 A. No.

10 Q. Fair?

11 A. Fair.

12 Q. Have you ever used -- do you know
13 what heavy liquid separation is?

14 A. Yes.

15 Q. Have you ever used that methodology?

16 A. Yes.

17 Q. Is that a valid scientific
18 methodology for analyzing samples, mineral
19 samples?

20 MR. HYNES: Vague. Overbroad.

21 THE WITNESS: It's a method
22 that's been used by mineralogists for a
23 very long period of time. All my life.

24 BY MR. PLACITELLA:

1 Q. Has it ever -- has it ever been used
2 by mineralogists, to your knowledge, for
3 determining whether there's asbestos in talc?

4 MR. HYNES: Overbroad. Calls
5 for speculation.

6 THE WITNESS: By
7 mineralogists?

8 BY MR. PLACITELLA:

9 Q. Yes.

10 A. There was a lady mineralogist whose
11 name is forgotten -- whose name I have forgotten
12 who I think used that. That would be the only
13 place I know.

14 It certainly would be a reasonable
15 thing to do for amphibole.

16 Q. Has it ever been -- is it a
17 reasonable thing to attempt for chrysotile?

18 A. No, I don't think so. I don't think
19 it works, but you can attempt it. But I don't
20 think it works.

21 Q. Why do you say that?

22 A. Well, because Dr. Longo used it and
23 he -- his light fraction was 17 to 20 percent of
24 the sample. So he's clearly not getting rid of

1 the talc.

2 Q. But does it assist in doing the
3 analysis whether it gets rid of it all or not?

4 A. It could. It was, as I understand
5 it -- and this is secondhand information from Eric
6 Chatfield -- ISO considered it and rejected it as
7 a process because it's inefficient, but there's
8 nothing wrong with attempting it.

9 Q. Do you have any criticism of
10 attempting to refine the liquid -- heavy liquid
11 separation in order to do analysis to determine
12 whether there's chrysotile asbestos in the talc
13 using PLM?

14 MR. HYNES: Vague.

15 THE WITNESS: I do not intend
16 to criticize it.

17 BY MR. PLACITELLA:

18 Q. Okay. And heavy liquid separation
19 is a valid scientific method for analyzing
20 minerals.

21 Do you agree?

22 A. For --

23 MR. HYNES: Asked and answered
24 and overbroad. Vague.

1 THE WITNESS: It's a valid
2 method for separating minerals.

3 BY MR. PLACITELLA:

4 Q. Fair. Thank you.

5 A. (Nods head).

6 Q. I am going to -- if you give me 10
7 minutes, I'm going to try to cut this down
8 dramatically because I think you've answered a
9 good percentage of my questions. So why don't we
10 take 10 minutes and maybe we'll save two hours.
11 Okay?

12 A. That would be great. Thank you.

13 THE COURT REPORTER: Off the
14 record at 11:02 a.m.

15 (Recess.)

16 THE COURT REPORTER: Back on
17 the record at 11:14 a.m.

18 BY MR. PLACITELLA:

19 Q. Not much more, actually, so I'm sure
20 you'll be happy about that.

21 Although maybe I should ask the most
22 important question first and that would determine
23 how far I go, and that is: Who is the best
24 Maryland basketball player of all time?

1 A. (Laugh).

2 MS. PARFITT: There you go.

3 THE WITNESS: Gee, that's a
4 tough one, but I'd probably have to go
5 with Len Bias, whom I taught.

6 BY MR. PLACITELLA:

7 Q. All right. I see we agree on
8 something.

9 A. (Laugh).

10 Q. All right. Other than the
11 discussion we had about what oils were used, do
12 you have any issue with the sample preparation
13 methodology used by Dr. Longo?

14 MR. HYNES: Vague.

15 THE WITNESS: I saw nothing
16 in the reports about sample preparation
17 that -- with which I found a problem. I
18 didn't -- didn't note anything.

19 BY MR. PLACITELLA:

20 Q. Okay. So you're not going to
21 testify that any of the methodology used by
22 Dr. Longo in preparing the samples for analysis
23 was in any way inconsistent with valid scientific
24 principles; is that fair?

Page 107

1 MR. HYNES: Form. Overbroad.

2 Vague.

3 THE WITNESS: (Laugh). No.

4 BY MR. PLACITELLA:

5 Q. When was it that you were first
6 retained or consulted by Johnson & Johnson in
7 relation to Talc Litigation?

8 MR. HYNES: Objection. I
9 think asked and answered during day 1 of
10 Dr. Wylie's deposition, but you can
11 answer.

12 MR. PLACITELLA: New
13 deposition. New report.

14 MR. HYNES: So to clarify, is
15 this specific to the recent chrysotile
16 report? The MDL report?

17 MR. PLACITELLA: No. I'm just
18 asking in general.

19 MR. HYNES: Okay. You can
20 answer.

21 THE WITNESS: Well, it was
22 sometime before I wrote that report in
23 2019. So, but I don't recollect. It was
24 about that report to ask me if I would be

1 interested in writing up the discussion
2 that I wrote up. So it would have -- it
3 would have been six months before that
4 report. I'm just guessing roughly.

5 BY MR. PLACITELLA:

6 Q. Okay. So sometime 2018 or 2019; is
7 that fair?

8 A. That's fair.

9 Q. All right. And you tested the J&J
10 samples subsequent to that time, correct?

11 MR. HYNES: Objection. Vague.
12 Misstates testimony.

13 THE WITNESS: No. Before.

14 BY MR. PLACITELLA:

15 Q. You tested --

16 A. I -- wait a minute. Wait a minute.
17 Let me just make sure it's clear.

18 The one in which I looked at and
19 spoke about to the FDA, that was before I was
20 contacted by Johnson & Johnson.

21 The bottle that I purchased from --
22 when they decided they weren't going to have it
23 anymore, that was between the time I was involved
24 with them for the first report. I didn't hear

1 anything from them. I had no contact with them
2 after that report until just late the end of last
3 year. So it was a long period of time I wasn't
4 engaged with them at all.

5 Q. So you tested their product after
6 you were first retained?

7 MR. HYNES: Overbroad.

8 THE WITNESS: Before I was
9 first retained, I tested the bottle. The
10 first bottle that I had that I reported
11 on at the JIFSAN conference, that was
12 before I was contacted by them.

13 But then between the time that
14 I prepared that first report and the time
15 I started on these reports, I had no
16 contact with them.

17 But I did test that -- test --
18 I looked at that sample that I purchased
19 toward -- right after they indicated they
20 were no longer going to have it, so I
21 would have a sample that I could use to
22 spike my amphiboles for the ASTM method I
23 was working on.

24 BY MR. PLACITELLA:

1 Q. And do you have any one -- so any
2 one of those samples still exist?

3 A. There are two samples. Yes, they
4 exist.

5 Q. And where are they?

6 A. They belong to the University of
7 Maryland, and they're in the talc collection.

8 Q. So the samples that you tested are
9 at the University of Maryland.

10 True?

11 A. Yes.

12 Q. Okay. And is any of the raw data
13 from your testing at the University of Maryland?

14 A. There's no raw data.

15 Q. Were photographs taken of what you
16 were testing?

17 A. Yes, uh-huh. There were two taken,
18 and they're in the JIFSAN report. They're in my
19 PowerPoint presentation.

20 Q. That was the one before you were
21 retained.

22 What about the one after you were
23 retained?

24 A. There are -- there's no -- no, I

Page 111

1 took no pictures.

2 Q. You took no pictures?

3 A. No. No.

4 Q. Did you report to Johnson & Johnson
5 what you found?

6 A. No.

7 Q. So to this day, Johnson & Johnson
8 has no idea what you found when you did the test
9 after you were retained?

10 A. Well, I don't -- hmm. That's an
11 interest questioning.

12 I mean, I don't know if they've even
13 asked me but -- directly but maybe they -- I might
14 have said I didn't find any in the material. I
15 can't remember, to tell you the truth.

16 Q. So if we wanted to go -- if we
17 wanted to test those samples on our own, they're
18 available for testing, correct?

19 A. No.

20 MR. HYNES: Objection.

21 Misstates testimony.

22 THE WITNESS: Not

23 necessarily. You could write to the
24 Department of Geology and request them.

1 BY MR. PLACITELLA:

2 Q. Right.

3 And was anybody with you when either
4 one of those -- when you conducted either one of
5 those tests?

6 A. No.

7 Q. Do you -- do you have a notebook in
8 front of you?

9 A. Yes.

10 Q. What -- what is -- can we mark that,
11 please?

12 A. It just has my three reports.

13 MR. PLACITELLA: All right.

14 Well, let's just mark the notebook so we
15 have it incorporated into the deposition.

16 Okay? So why don't we just
17 mark it Wylie 1 with the date.

18 THE WITNESS: Sure.

19 MR. HYNES: Chris, if you
20 want, I can just describe the contents.

21 It's a small binder with three
22 tabs. First tab is a February 25, 2019
23 report. Second tab is an April 9, 2024
24 report. Third tab is a May 3, 2024

Page 113

1 report. And in the front pocket is the
2 corrected Figure 21 associated with the
3 tabs 2 and 3.

4 (Binder marked for
5 identification as Wylie Exhibit 1.)

6 BY MR. PLACITELLA:

7 Q. Do you have anything else with you
8 today other than that binder?

9 A. No.

10 Q. Now, in the course of your
11 testimony, you described what you saw as different
12 colors in different photographs.

13 Do you recall that?

14 A. Yeah, I guess. Yes.

15 Q. And it's also in your report,
16 correct?

17 A. Yes. Yes.

18 Q. And would you agree with me that not
19 everyone agrees necessarily with what they see in
20 color, that it has variations?

21 MR. HYNES: Vague. Calls for
22 speculation.

23 THE WITNESS: I think in
24 particular there's, yes, some

1 disagreement even among the experts on
2 how they describe it with words.

3 So it's not totally clear to
4 me that they're actually saying something
5 different, but they just -- some of the
6 colors for particular lambda zeros they
7 describe slightly differently. Yes.

8 BY MR. PLACITELLA:

9 Q. All right. And some of that -- we
10 said this before -- can be -- can be the subject
11 of experience and wisdom and seeing things in the
12 past.

13 True?

14 MR. HYNES: Objection to form.

15 Vague.

16 THE WITNESS: No, I'm not sure
17 about that. Sometimes people's
18 sensitivity to color varies. It's a
19 personal -- personal quality
20 characteristic. Eyes are different.

21 BY MR. PLACITELLA:

22 Q. All right. Somebody --

23 A. (Laugh).

24 Q. Somebody could see more gold than

1 yellow or more blue than green or more -- right?

2 That's -- that's the subject of
3 interpretation by individual scientists based on
4 their experience, correct?

5 MR. HYNES: Overbroad. Calls
6 for speculation.

7 THE WITNESS: I don't think I
8 can answer that because you put those
9 qualifiers in it.

10 I don't think most people -- I
11 think most people would see the
12 difference between blue green and blue,
13 and I don't think that's a personal
14 variation.

15 BY MR. PLACITELLA:

16 Q. Okay. Did you ask Johnson &
17 Johnson, in preparing your most recent reports,
18 for any information other than what was supplied
19 in Dr. Longo's report?

20 A. No.

21 Q. Okay. And are all of your -- well,
22 is it fair to say that -- strike that.

23 All of the opinions that you may
24 provide in this case, they're all contained in the

1 four corners of your report?

2 A. Correct.

3 Q. Is there anything in Dr. Su's report
4 that you disagree with?

5 A. One statement.

6 Q. What's that?

7 A. (Laugh).

8 He says that today geology
9 departments don't teach optical mineralogy for an
10 entire semester. They only do it for two weeks,
11 and that's not true. University of Maryland does
12 it for an entire semester.

13 Q. Good for you.

14 A. (Laugh).

15 Q. That's the only statement you
16 disagree with?

17 A. Yes. (Laugh).

18 Q. And you never asked him about the
19 best Maryland basketball player?

20 A. And I never did. (Laugh).

21 Q. Okay. I think that's all I have.

22 A. Okay.

23 Q. I'm sorry to disappoint you to get
24 you out of here before lunch.

1 A. (Laugh). It's perfectly all right.
2 Thank you. Maybe I'll see you at a basketball
3 game.

4 THE COURT REPORTER: Off the
5 record at 11:27 a.m.

6 MR. HYNES: No one else has
7 any questions?

8 MR. PLACITELLA: We're done?

9 MR. HYNES: We're done.

10 MS. PARFITT: We're done.

11
12 (Signature not waived, the
13 deposition concluded at 11:27 a.m.)

14
15 * * *

16

17

18

19

20

21

22

23

24

ERRATA SHEET

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

Page No. _____ Line No. _____ Change to: _____

DECLARATION UNDER PENALTY OF PERJURY

I declare under penalty of perjury that I have read the entire transcript of my Deposition taken in the captioned matter or the same has been read to me, and the same is true and accurate, save and except for changes and/or corrections, if any, as indicated by me on the DEPOSITION ERRATA SHEET hereof, with the understanding that I offer these changes as if still under oath.

Signed on the _____ day of _____, 2024.

ANN G. WYLIE, PHD

Page 120

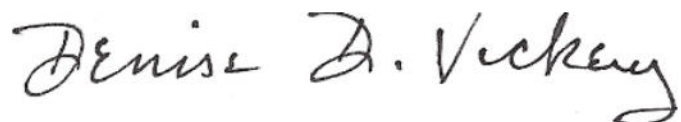
1 CERTIFICATE OF REPORTER

2 DISTRICT OF COLUMBIA)

3 I, Denise Dobner Vickery, a
4 Registered Court Reporter and Notary Public of
5 the District of Columbia, do hereby certify that
6 the witness was first duly sworn by me.

7 I do further certify that the
8 foregoing is a verbatim transcript of the
9 testimony as taken stenographically by me at the
10 time, place and on the date herein set forth, to
11 the best of my ability.

12 I do further certify that I am
13 neither a relative nor employee nor counsel of
14 any of the parties to this action, and that I am
15 neither a relative nor employee of such counsel,
16 and that I am not financially interested in the
17 outcome of this action.

18
19 
20

21 DENISE DOBNER VICKERY, CRR, RMR
22 Notary Public in and for the
23 District of Columbia

24 My Commission expires: March 14, 2028

[& - 6.30]

Page 1

&	1.560 40:20 41:17 52:15 55:9 56:15 57:17 58:1 1.560. 52:4 1.566 54:16 55:20 1.585 54:10 1.586 53:17 54:10,15 55:3 55:19 1.586. 54:5 10 22:13 42:3 71:2 101:5 105:6,10 10036 4:17 10:15 69:15 10:23 69:18 11 28:19 29:3 31:18 91:6 113 6:8 1185 4:16 11:02 105:14 11:14 105:17 11:27 117:5,13 12 22:13 91:6 127 3:8 14 120:24 1440 2:16 15 69:6 15207 120:20 16-2738 1:6 17 103:23 1825 3:19 1978 64:14	1980s 99:15,20 1995 64:16 2 2 6:14 113:3 20 12:20 103:23 2000 12:20 20005 2:17 20006 3:20 2001 12:21 2018 12:15 13:3 108:6 2019 6:9 100:4 107:23 108:6 112:22 202.759.7648 3:21 2020 12:21 96:10 2021 12:21 2024 1:16 2:8 6:10,11,20 112:23,24 119:16 2028 120:24 21 6:13 12:21 66:16 67:5 113:2 212.790.5349 4:18 218 4:6 222 67:23 23 97:3 24 1:16 2:8 6:20 25 6:9 112:22	3 3 5:7 6:11,14 112:24 113:3 30 6:20 308.874.3186 4:8 310 5:7 36103-4160 4:7 4 400c 67:14 400f 67:14 425c 67:14 480 68:6 480c 67:14 68:5 5 5,000 30:7 31:6 6 6-10 42:2 6.10 42:3 6.11. 46:23 6.12. 49:24 6.13 51:17 6.13. 51:16 6.14. 52:21 6.17 55:22,24 6.18. 57:4 6.2 6:20 24:14 26:11 6.20. 58:17 6.24. 60:4 6.26 60:23 6.26. 60:23 6.30 62:20 65:16
& 1:5 2:14 3:4 3:17 4:12,12,14 5:5 10:9,13 11:5,15 12:2,4 12:9 13:7,10 14:6,13 19:12 19:15 21:16 71:21 75:1,6,15 75:24 76:10 78:14 97:7,18 97:23 98:7 99:13,20 100:1 100:5 107:6 108:20 111:4,7 115:16			
0			
002 54:6 07701 3:9 08002 5:8			
1			
1 6:8,16 26:13 107:9 112:17 113:5 1.55 42:19 1.550 39:23 40:19 41:16 55:9 56:15 57:17 58:1 66:15,16 1.552 39:23 1.552. 66:16 1.554 39:24			

[6.31 - antarctic]

Page 2

6.31 65:16,18 6.35 67:11 69:20 73:1 6.35. 67:6 6.4 28:8 6.5 36:19 6.8 38:5 60s 96:3 614 52:22 6754009 1:24	117:5,13 ability 25:8 72:1 93:10 120:11 able 11:9 23:15 24:5 27:22 29:22 39:16 45:19,23 46:2 56:24 57:24 59:2 66:24 68:10 72:8 89:12 90:23 91:2 above 26:15 absence 27:24 92:8,9,10,15 absent 84:4 absolutely 92:15 absolutes 101:18 102:4 accurate 97:4 119:8 accurately 41:6 action 120:14 120:17 activities 22:10 actual 18:6 actually 43:1 43:22 61:17 79:16 92:17 105:19 114:4 added 17:14,15 26:15 31:2 addition 14:19 18:8	adequate 85:17 advance 68:1 advantage 39:17 affect 93:10 affected 42:22 ago 7:21 22:13 63:24 76:1,22 agree 55:21 58:10 81:8 101:19 104:21 106:7 113:18 agrees 113:19 air 94:23 96:4 al 4:7 allen 4:4 allow 84:24 alters 69:23 ambiguity 23:16 74:20 amend 17:22 americas 4:16 amount 16:3,9 amounts 80:16 amphibole 23:3 23:11 103:15 amphiboles 109:22 analyses 14:16 41:16 76:3 96:8 98:15 analysis 11:15 16:14 23:17 30:21 31:19 32:11,21 37:24 52:17 55:6 68:1	74:4 75:16,23 96:11 98:20 104:3,11 106:22 analyst 17:16 31:20 32:20 37:23 74:4,6,12 analytical 37:19 analyzed 19:14 39:13 63:17 64:12 65:2 75:1 analyzing 15:10 31:16 35:11 87:18,22 102:18 104:19 ann 1:13 2:11 6:2,21 7:3 119:19 announced 11:6 answer 19:4 36:10 39:5 45:2 52:11 72:5,8 76:6 87:8 93:13 94:20 98:11 101:21 107:11 107:20 115:8 answered 32:9 35:16 43:4 83:12 85:21 104:23 105:8 107:9 answers 100:14 antarctic 96:6
7			
7 6:3 52:23 700 3:19 70s 20:4 21:9 32:24 96:3,9 732.747.9003 3:10 7a 53:16 7b 53:16			
8			
80s 20:4 21:9 33:1 96:3,9 99:24 856.317.7180 5:9 8:58 1:17 2:9			
9			
9 6:10 112:23 90 80:24 90s 96:9			
a			
a.m. 1:17 2:9 69:15,18 105:14,17			

[anticipate - basis]

Page 3

anticipate 78:2	30:22 31:17,22	associations	aware 36:9
antigorite 92:5	32:6,19 33:6,20	92:4	37:23 38:4
anybody 112:3	34:17 35:14	assume 78:12	75:22
anymore	36:3 72:2 90:19	assumed 67:4	axis 29:21 30:2
108:23	92:22 95:7	assumes 89:1	30:4 60:10
apart 40:2	97:18,24 98:8	95:11,19 96:14	b
appear 27:13	100:12 101:11	100:23	baby 13:8,11
49:8 91:24	101:17 103:3	assuming 57:20	14:20 16:14
appearances	104:12	76:5	21:17 33:21
3:1 4:1 5:1	ashcraft 3:17	astm 11:1 13:15	70:7 75:2,6
appeared 91:9	ashcraftlaw.c...	37:8 38:1 99:23	90:16
appendix 17:14	3:22	100:9,9,10,21	back 69:13,17
17:14	asked 11:21	109:22	90:14 91:22
apply 14:10	18:20 19:5	astounded	93:1 97:1 99:15
84:14	20:11 32:8	80:14	99:20 105:16
approach 91:15	35:15 48:16	atlas 61:18	background
92:18	49:4,6 78:18	atomic 69:24	10:24 13:14
approaches	83:11 85:21	71:8,15,19	ball 70:17 71:2
37:20	100:11 104:23	attached 6:16	71:7,20,24 72:9
approved	107:9 111:13	attempt 29:17	72:17 93:9 94:1
100:21	116:18	30:19 31:9,24	102:2
april 6:10	asking 8:5 17:2	32:14 103:17	bank 3:9
112:23	35:18,20,22,24	103:19	based 27:22
argumentative	37:21 45:2	attempted	35:4 45:14,21
15:16 48:10	78:22 89:22	14:10	50:18 55:17
74:15 85:21	107:18	attempting	56:9,23 59:8
88:5,15 89:1	assertion 60:24	104:8,10	62:15,16 65:8
arps 2:14	assessment	attorneys 11:16	82:9 85:18
article 37:3	38:17	augment 42:24	98:18 99:4
asbestos 10:11	assign 92:11	authenticate	101:9 115:3
10:15 13:12	assist 16:21	16:1	basic 47:17
14:20 19:11,17	104:2	available 29:13	basically 54:7
19:21 20:15	assisting 53:10	111:18	basis 63:12
21:2,8,11,13	associated 6:13	avenue 2:16 3:8	72:13
22:23 27:24	70:2 92:1 113:2	4:16	
28:12,21 29:8			

[basketball - chris]

Page 4

<p>basketball 105:24 116:19 117:2 bat 68:3 beasley 4:4 beasleyallen.... 4:9 beginning 26:10 91:6 believe 22:20 28:9 55:18 94:8 94:15 belong 110:6 best 105:23 116:19 120:11 beta 90:23 better 36:15 39:5,20 bias 106:5 big 65:4 bigger 50:15 billed 78:1 binder 6:8 112:21 113:4,8 birefringence 58:14 bit 27:14,15 39:21 40:2 45:5 45:7,12,17 49:16 50:13,15 55:6 91:22 94:14 blanks 96:12,12 96:15 blew 53:13</p>	<p>bloss 27:3,3,5,5 bloss's 26:24 38:17 blowing 24:14 blue 26:14 27:18 47:16,17 49:21 50:13 51:19 115:1,12 115:12 bluish 51:19,20 book 30:17 37:4 37:5,6 books 26:24 38:14,15,16,17 bottle 20:7 108:21 109:9 109:10 bottom 73:1 bought 19:22 box 25:10 boxes 25:9 break 69:2 bright 51:19 bring 51:8 brought 27:12 building 2:15 30:21 bulb 28:5 bunch 76:2 bundle 93:11 94:3 bundles 23:15 94:10 buy 11:10</p>	<p>c c 7:1 calidria 62:21 call 33:4 called 7:4 calling 82:20 callout 25:17 25:20 calls 28:24 50:22 52:9 54:22 100:24 103:4 113:21 115:5 campus 5:7 capable 74:12 capacity 72:1 captioned 119:6 care 5:3 case 11:22 14:5 16:7,22 45:15 48:4 60:15 66:10 71:12 98:18 102:6 115:24 cause 94:2 central 47:6 certain 62:5,5 certainly 16:2 20:1 31:8 73:16 74:21 103:14 certainty 93:21 certificate 120:1</p>	<p>certified 2:21 certify 120:5,7 120:12 change 9:6 60:10 62:6 65:8 70:3 72:1,22 80:12 88:2,6,7 88:12,21 89:3 89:14,18 91:8 91:11 100:19 118:3,5,7,9,11 118:13,15,17 118:19,21,23 changed 71:14 89:3,19 changes 7:22 18:6,7,14 49:15 119:9,12 changing 28:5 58:14 87:13 90:1 characteristic 114:20 characteristics 31:21 characterize 47:4 chart 80:22 chatfield 104:6 chemical 61:1 chemistry 62:11 cherry 5:8 choose 31:6 chris 24:17 112:19</p>
--	---	--	--

[christopher - conducted]

Page 5

christopher 3:5	83:23 101:7	columbia 2:23	components
chrysotile	108:17 114:3	120:2,5,22	68:2
13:12 14:19	clearly 55:2	come 48:2 64:6	computer 26:1
16:1,3,5,9,12	68:7 90:24	72:15 84:15,21	26:3
19:11 23:2,6,14	103:24	coming 7:19	concerned
23:21 29:8	close 22:9	comment 28:3	73:15 74:18
31:11,17 32:6	closer 53:17	39:3 66:24 68:9	75:11 79:24
33:6,14 34:8,17	54:10,15 55:12	84:7,13 89:17	80:3
34:24 35:2,10	55:19	commentary	concerning
35:14 36:3	clothes 96:5	52:1 66:18	27:23
37:15 48:22	coalinga 63:2	commented	concerns 7:23
52:24 55:8 56:4	63:11,14,15,17	58:11 82:15	conclude 47:19
57:19 61:2,11	63:23 64:11,24	comments	48:21 57:23
61:22 62:16	65:4	42:22	concluded
63:2,2,10 64:23	cohen 3:4	commerce 4:6	39:15 54:14
72:2 73:2,10,16	collection 12:17	commercial	117:13
74:19 75:14	64:3,4,7,10	74:4	concluding
82:20 90:19,20	75:8 110:7	commission	80:5
91:18,23,24	color 43:2 46:4	120:24	conclusion 15:5
92:15,22 93:3,6	47:17 51:13,20	committee	44:9 45:20 48:3
93:7 94:9,16	80:16 81:17	100:2,10	52:23 53:23
95:3,7 96:2	82:23 88:2,7,13	commodity	54:19 68:18
101:11,17	90:2 113:20	31:4	71:12 82:3
103:17 104:12	114:18	common 60:7	84:21 95:15
107:15	coloring 27:13	companies 21:7	98:19
circumstances	colors 41:1,20	company	conclusions
93:2 94:16	45:12 46:10,19	100:18	27:22 28:5
cite 37:2	47:13,17 48:24	comparison	43:14 45:14,24
city 96:4	50:10,20 51:17	42:15,19 59:3	46:3 58:1 59:4
clarified 48:18	53:2,15 55:16	compensated	82:9 83:18,23
clarify 107:14	55:19 57:16	77:23 78:2	84:16 85:18
clear 23:20	63:9 70:3 80:17	compile 40:22	95:7 97:14
26:8 34:11 46:8	87:13 88:21	compiled 17:16	98:14 99:3
46:15,18 48:5	89:3,19 113:12	41:19	conducted
48:20 58:21	114:6	complicated	75:23 112:4
67:15 73:11		93:12	

[conducting - data]

Page 6

conducting 20:13	96:2	108:10 111:18	69:14,17 87:5
conference 109:11	contents 112:20	113:16 115:4	88:3,11,13,21
confirm 16:2,5 73:9 74:21	contexts 38:24	116:2	92:7 105:13,16
confirmation 74:22 92:17	contradicted 61:3	corrected 6:12	117:4 120:4
confirming 92:18	conversations 79:6	113:2	courthouse 86:10,10,12
confused 44:3	copy 50:14	correction 65:19	courts 15:21
considered 33:12 104:6	corner 26:7	corrections 65:22 66:20	cplacitella 3:11
consistent 31:11 34:7 63:8 63:10 64:15	corners 116:1	119:9	cpirlaw.com 3:11,12,13
consult 16:17	correct 15:6,23 16:15 17:9,10	correspond 56:3	create 12:23 47:9 71:22
consulted 107:6	20:15,23 23:22	cosmetic 19:11	criticism 33:11 33:16 34:12
consumer 4:13 20:22	23:23 24:1,20	19:14,20 20:6	40:12 104:9
contact 109:1 109:16	25:21,22 28:1,6	20:14,17,21	criticize 38:24 84:3 104:16
contacted 108:20 109:12	28:7,12 33:21	28:20 31:16	criticizing 76:15
contained 13:12 19:16,21 21:1 33:14 34:17 115:24	35:6,7 36:20	32:5,11,12	crr 1:23 120:21
contains 10:10 10:14 20:15 35:13 36:3	37:3 39:5 44:10	35:10,11 36:2,8	crystallography 27:4
contaminated 94:24 97:23 98:8	44:11,12,17,20	37:15,18,20,24	curiosity 25:24
contamination 94:19,21 95:9	45:24 46:11,12	92:22 93:4	curious 25:2
	46:17 47:11	94:17 99:15,22	cut 105:7
	48:12 51:9,10	cotton 68:3	d
	53:21 54:16,20	council 5:3	d 7:1 39:6,19 40:3 41:7 52:19 54:15 55:10,19 56:15 81:21 83:4
	55:17 56:5,11	counsel 120:13 120:15	damage 71:3
	57:1,2 58:2,24	counted 97:5	data 17:15,17 33:13,18,19 34:15,21,21,23
	59:1,6,7,10,21	county 76:23	
	60:2,3 62:18,19	couple 10:16,19 43:22 69:7 76:22	
	66:11 67:3	course 11:1 30:22 31:22 32:13 64:18 113:10	
	68:13,14,18,19	court 1:1 17:9 20:11 48:7	
	68:21,24 72:24		
	73:18 74:1 75:2		
	76:11,12,15		
	77:16 81:9 82:3		
	82:10,14 93:23		
	94:4 97:19,20		
	97:24 98:9 99:5		

[data - discuss]

Page 7

42:9 43:9,13,18 43:21 44:7,14 44:24 45:14,22 46:16 52:7 53:23 56:9,24 58:23 59:10,13 59:16,17 60:2 61:4,7 63:1,14 68:10 82:9 83:9 83:17,20,22 84:14,14,14,20 85:18 98:19 99:4 110:12,14 date 21:2 112:17 120:10 dates 12:20 day 8:24 11:11 11:13 107:9 111:7 119:15 dc 2:17 3:20 debriefed 79:10 79:12 decided 108:22 declaration 119:1 declare 119:4 deeper 42:1 deer 38:17 defendants 4:12 definitely 14:9 definitive 15:5 degree 93:21 degrees 67:5 demonstrate 58:6	demonstrated 33:20 39:13 demonstrates 47:22 50:7 denise 1:23 2:20 120:3,21 department 111:24 departments 116:9 depending 62:5 62:7 64:19 92:13 94:3 depends 29:15 depicted 26:13 deposit 64:19 deposition 1:12 2:11 6:6 7:15 7:16 8:4,10,15 8:20,24 9:23 10:8,21 36:15 76:2,8,9 96:24 107:10,13 112:15 117:13 119:6,10 depth 65:8 describe 25:12 112:20 114:2,7 described 18:16 26:4,5,23 30:16 70:2 81:22 83:14,24 113:11 description 6:7 65:12	destroyed 71:16,19 destructive 71:7 detail 86:6,8 detailed 93:14 details 71:9 detect 72:1 detected 101:12 detecting 100:12 detection 92:12 92:13 determination 48:8 81:20 determine 10:10,14 13:11 13:24 19:16,21 20:15 21:1 28:20 29:7 31:10,24 32:19 33:5,13,19 34:16,22 35:13 36:2 37:15 41:6 49:23 83:17 89:12 104:11 105:22 determining 22:22 23:5 103:3 develop 91:2 development 100:7 difference 17:11 96:7 115:12	differences 50:20 different 15:12 15:21 17:7,18 30:8,9 35:18 36:20,23 37:9 42:22 50:18 51:13 58:21 59:3 84:15,21 88:23 113:11 113:12 114:5 114:20 differently 114:7 dinner 79:3,4,8 direction 74:9 directly 61:3 111:13 disagree 22:24 54:19 55:14 56:8,23 58:1,10 82:9 87:4 95:6 99:3 116:4,16 disagreed 47:20 68:18 80:11 81:12 disagreement 114:1 disagrees 55:1 55:2 disappoint 116:23 disc 70:18 discuss 54:3 79:17 86:1,6,8 86:9,11
--	--	---	---

[discussed - example]

Page 8

<p>discussed 62:4</p> <p>discussion 67:21 86:3 106:11 108:1</p> <p>dismay 86:4</p> <p>dispersion 29:20 30:1,3 40:23 41:5,19 43:1 44:23 45:12 46:9,19 47:6,7 48:23 53:1 54:2 55:15 57:15,18,20,24 58:6 63:8 70:3 80:17 81:17 82:22</p> <p>dispersions 55:7</p> <p>display 29:20</p> <p>distinguished 53:1</p> <p>district 1:1,2 2:23 120:2,5,22</p> <p>dive 42:1</p> <p>dobner 1:23 2:21 120:3,21</p> <p>document 25:14 88:12,22</p> <p>documents 97:1</p> <p>doing 10:24 11:19 13:14 14:23 15:13 53:11 74:12 81:22 90:23 104:2</p>	<p>donald 27:3,5</p> <p>doubt 54:21</p> <p>dr 7:11 26:1 33:12,17 34:13 34:14 38:24 42:6 45:22 47:20 48:7 50:4 53:22 55:2 56:9 56:23 58:10 59:9 62:18 65:1 67:2 68:12,18 76:15,24 77:11 78:6,22,24 79:2 79:7,9,11,15,21 79:23 80:10 81:7,11 82:2 86:1,2,13,17,20 86:22 87:10,15 98:20 103:22 106:13,22 107:10 115:19 116:3</p> <p>dramatically 105:8</p> <p>draw 43:14 44:8 45:19,24 46:3,16 47:10 59:4 67:2 68:17 83:9 85:17</p> <p>drawing 45:14</p> <p>drawn 83:18 97:14 98:14</p> <p>drew 3:7</p> <p>dubin 78:22 79:1,6 87:5,12</p>	<p>due 61:1,22 62:3 89:22</p> <p>duly 7:5 120:6</p> <p>dust 96:4</p> <p>e</p> <p>e 7:1,1 57:17</p> <p>earlier 92:20</p> <p>early 20:3 40:7 41:9</p> <p>eastern 1:17 2:9</p> <p>easy 74:22</p> <p>effect 39:3</p> <p>either 27:17 71:17 112:3,4</p> <p>electron 73:3</p> <p>elongation 42:11 53:18 57:16</p> <p>employ 87:18</p> <p>employed 56:10,13 68:11</p> <p>employee 120:13,15</p> <p>encourage 60:9</p> <p>engaged 14:16 109:4</p> <p>enlighten 89:21 89:23</p> <p>entire 116:10 116:12 119:5</p> <p>entirety 98:17</p> <p>epasternack 3:12</p>	<p>eric 3:6 104:5</p> <p>errata 118:1 119:11</p> <p>especially 16:10</p> <p>esq 3:5,6,7,18 4:5,15 5:6</p> <p>essentially 25:12 48:23</p> <p>estimate 42:12</p> <p>evaluate 30:1 30:19,20 36:4</p> <p>evaluating 28:11 32:4,18 37:13</p> <p>evaluation 37:10,12</p> <p>evidence 60:14 60:16 66:2,10 95:9 98:3</p> <p>ewald 9:14,15</p> <p>exact 78:19 84:7</p> <p>exactly 10:6 12:22 26:4 43:5 70:19 82:14 86:3</p> <p>examination 6:2 7:4,8 87:14</p> <p>examine 28:20 29:4 91:13</p> <p>examined 7:5 58:20</p> <p>example 29:19 64:16 91:10</p>
---	---	--	---

[examples - found]

Page 9

examples 17:13 18:2,8 except 119:9 excuse 51:12 78:18 executive 5:7 exercise 33:18 44:15 45:23 50:6 exhibit 6:8,16 6:20 24:14 42:2 113:5 exhibits 6:6,18 exist 23:24 24:2 24:6 110:2,4 expect 45:8,13 expected 27:15 45:18 66:18 experience 35:5 50:19 51:9,11 51:12 54:14 114:11 115:4 expert 1:12 2:11 6:20 45:23 expertise 101:9 experts 28:19 52:6 114:1 expires 120:24 explain 73:5 81:2 explicitly 68:4 expose 89:15 expressed 86:4 extensive 13:18 13:21	extent 64:19 extrapolate 55:8 extrapolated 56:14 83:2 extremely 30:4 extremes 62:10 eyes 114:20 f face 25:13 fact 45:11 46:7 55:14 92:10 97:18 100:3 facts 89:1 95:11 95:19 96:14 100:23 fair 19:23 43:15 81:6 84:18,21 85:19,23 98:21 102:10,11 105:4 106:24 108:7,8 115:22 familiar 71:20 72:7 far 39:19 40:20 105:23 fast 67:7 fda 13:4 108:19 february 6:9 112:22 federal 17:8 fibers 72:10 fibril 23:14 fibrils 23:13,22 73:2 91:24 93:6	93:7,11 94:3,9 94:16 95:3 fibrous 91:9 field 49:20 figure 6:13 26:13 29:24 46:22 52:23 113:2 figures 53:16 91:7 filter 26:15 27:19 filters 96:19 final 18:24 72:2 financially 120:16 find 13:16 14:2 15:1 16:8 93:3 94:16 101:17 111:14 finding 18:8 fine 7:13 finely 101:11 101:13,16 first 18:12,18 23:9 52:23 62:2 63:21 99:2,8,10 105:22 107:5 108:24 109:6,9 109:10,14 112:22 120:6 five 69:9,10 76:1 96:24 flawed 83:6 fлом 2:14	follow 14:3 67:15 followed 67:20 68:15 following 18:22 follows 7:6 foregoing 120:8 forgotten 103:11,11 form 9:6 15:15 17:24 19:16 20:16 26:20 33:22 34:19 40:14,17 41:11 44:18 46:1 53:24 59:11,18 66:6,12 68:20 73:23 74:2,14 75:3,18 76:16 80:1 81:15 82:5 82:11 83:11 84:11,22 85:20 87:6,19 88:4 90:4 94:5 95:10 95:18 98:22 99:16 100:22 107:1 114:14 formal 19:6 35:21 forms 92:1 forth 14:4 120:10 found 14:8 41:1 41:3 76:20 91:9 95:7 106:17 111:5,8
---	---	--	---

[four - historically]

Page 10

four 10:3 116:1 fraction 103:23 fragment 13:3 frankly 56:13 free 21:13 friday 18:21,24 19:7 front 6:12 26:1 47:5 68:6 76:3 112:8 113:1 function 78:9 fundamentally 49:18 further 40:2 45:5 69:1 120:7 120:12	82:10 85:19 98:19 99:4 generating 44:14 59:9 generically 93:14 geology 111:24 116:8 gerel 3:17 getting 39:5 67:7 99:23 103:24 give 10:7 19:6 38:15 51:24 70:20 74:9 82:2 97:21 105:6 given 12:16 30:18 67:13 68:16 76:10 79:21 90:15 gives 17:15 44:4 go 16:4 23:19 24:11 36:13 45:4 46:22 48:1 49:1,22,24 51:16 52:21 55:5 61:14,20 67:6 68:5 73:5 73:14 77:21 78:15,19,20 88:21 90:12 91:22 92:15,17 100:9 105:23 106:2,4 111:16	goal 15:7 going 11:6,9 13:13 21:8 27:7 36:14,17 42:2 49:24 55:22 57:3 60:4 62:20 69:5,6 83:22 84:3,23 85:11 89:24 90:16,17 92:7,16 99:15 99:20 101:5 102:6 105:6,7 106:20 108:22 109:20 gold 22:22 23:1 23:5 114:24 golden 51:20,23 good 7:11 12:19 105:9 116:13 government 37:7 grammatical 18:14 great 105:12 green 115:1,12 grind 72:10 101:11,14,15 grinding 70:1,6 93:9 grocery 10:23 11:4,12 ground 72:16 group 99:24 groups 24:3 guess 36:10 66:17 72:6	113:14 guessing 108:4 h hand 26:6 happened 22:7 101:3 happy 105:20 hard 50:14 101:18 head 8:23 9:17 26:2 105:5 hear 77:18,18 108:24 heard 79:9 80:13 86:4 hearing 76:23 77:8 86:4 heated 67:12 heating 67:24 heavy 102:13 104:10,18 held 2:12 help 29:11 52:6 78:21 helpful 9:13 18:3 henrich 5:5 hereof 119:11 high 85:5 91:2 higher 39:15 highlighted 57:6 60:5 hill 5:8 historically 22:3
g g 1:13 2:11 6:2 6:21 7:1,3 119:19 gain 39:24 game 117:3 gamma 90:22 gee 106:3 general 38:16 107:18 generally 72:18 86:23,24 100:13 generate 45:22 50:4 59:16 83:8 generated 34:14 44:7 46:16 56:9,24 67:1 68:11			

[hmm - industry]

Page 11

hmm 111:10 hold 24:11 hour 69:6 hours 10:3,7 71:2,9 105:10 howie 38:17 huh 28:2 37:1 42:7,14 110:17 hynes 4:15 8:16 9:10,14 15:15 16:23 17:24 18:9 19:2 20:16 24:17,21,23 25:6,9,16,22 26:20 28:23 29:5,9 32:8 33:8,22 34:19 35:15 36:5 40:14,17 41:11 44:18 46:1 48:10,13 50:22 52:8 53:24 54:22 58:3 59:11,18 66:6 66:12 68:20 69:8,12 73:23 74:2,14 75:3,18 76:16 77:9 80:1 81:15 82:5,11 83:11 84:11,22 85:20 87:6,19 88:4,14,24 90:4 94:5 95:10,18 96:13 98:1,22 99:6,16 100:22 102:20 103:4	104:14,23 106:14 107:1,8 107:14,19 108:11 109:7 111:20 112:19 113:21 114:14 115:5 117:6,9 hypothesis 57:18 hypothetical 96:14 100:24 i ice 96:6 idea 29:1 50:24 51:14 60:22 78:11 111:8 ideal 40:4 identifiable 9:9 24:7,8 73:3 identification 113:5 identified 20:22 57:19 identifies 63:10 identify 19:10 20:8 29:11 31:23 34:2,2 identifying 28:13 identity 28:14 28:16 30:11 32:2 91:5 illuminating 87:23	illumination 59:21 image 25:11 89:14 immersed 60:8 impact 72:19 implies 46:13 importance 67:24 important 17:22 28:13 30:5 76:14 105:22 improper 89:10 inclination 101:22,23 include 67:14 incomplete 96:14 100:23 inconsistent 16:11 34:23 35:2 58:23 83:19 106:23 incorporated 112:15 incorrect 48:9 71:17 82:17 independent 34:15 35:5 44:9 44:16 46:17 47:10 50:6 60:1 62:17 67:2 68:12,17 84:13 85:18 independently 24:2,6	index 6:1 38:8 38:21 39:6,14 41:7,21 43:2 46:21 53:17 54:14 55:3,9 72:21 80:12 81:20 indicate 53:13 55:24 57:5,7 60:5 67:10 69:1 69:22 71:6,13 73:1 indicated 64:23 66:14 90:7 109:19 119:10 indicating 62:14 indication 49:12 65:21 indicative 53:16 indices 49:16 49:19 54:8 55:12,15 56:2,3 58:22 62:9 63:7 70:2 71:14 72:20 82:21 91:1 individual 23:13,21 93:7 93:11 115:3 industrial 20:24 21:5,15 22:4 32:23 industry 99:24
---	--	---	--

[inefficient - know]

Page 12

inefficient 104:7 influenced 66:3 inform 82:24 information 27:23 34:5 37:14 38:15,21 40:1,22 43:20 44:21 46:14,15 48:19 50:5 52:13 54:2 58:5 61:18 68:17 71:11 74:20 77:16 83:1,16 104:5 115:18 insert 26:9 instinct 72:6 instincts 93:16 intend 104:15 intensities 89:4 intensity 88:8 89:19 90:2 interact 100:17 interaction 99:19 interest 92:14 111:11 interested 108:1 120:16 interesting 42:21 72:3 81:2 interfere 59:24 interference 15:9 29:24 91:7 interpret 50:8 50:9,9	interpretation 66:4 115:3 interrupt 64:8 introduction 27:3 invoices 10:7 involved 108:23 irrelevant 76:18 iso 67:16,19,21 68:16 85:6 104:6 isolation 91:24 issue 11:22 14:5 16:18 29:16 97:1 99:14 106:12 issued 17:7,23 18:19 issues 85:2,3	14:5,6,13,13 19:12,12,15,15 21:16,16 71:21 71:21 75:1,6,15 75:15,24,24 76:10,10 78:14 78:14 97:7,7,18 97:23 98:7,7 99:13,13,20,20 100:1,2,5,5 107:6,6 108:20 108:20 111:4,4 111:7,7 115:16 115:17 johnson's 14:20 16:14 21:17 33:21 70:7 75:2 75:6 90:15 95:8 95:16 97:18,23 98:20 judge 20:11 77:4 89:24 90:1 judgment 33:3 33:19 35:5 44:16 47:11 50:6 51:9 54:13 55:18 60:1 62:17 june 1:16 2:8	khynes 4:19 kind 31:3 37:9 37:11 38:19,20 kinds 49:17 king 4:14 kkotch 5:10 know 12:19 14:2 18:10 20:5 20:6,7 21:7,18 21:23 27:19 28:17 30:7,11 31:3,20 32:2,21 34:6 36:11 39:16,23 40:20 43:1,3,5,6,7 44:22 51:2 53:8 56:12,14,16 58:9 62:22 64:11,15,24 65:5,7,10,10,15 66:21 68:2 69:3 70:6 71:1,5 72:4 77:17 78:13 81:13,18 81:23 84:1,2,5 84:9 86:13,15 87:9 89:10,11 89:14,18 91:4 91:10 92:8 93:17,18,19 94:6,7 95:12 100:2 101:18 101:24 102:3 102:12 103:13 111:12
	j j&j 18:23 79:11 79:14 108:9 jersey 1:2 76:23 jifsan 13:5 109:11 110:18 job 1:24 john 9:14,15,19 johnson 1:5,5 4:12,12,12,13 10:9,10,13,14 11:5,5,15,15 12:2,3,4,4,9,9 13:7,7,10,11	k 3:19 keep 22:4 27:7 69:6 kevin 4:15 5:6 8:16 26:5	

[knowing - lunch]

Page 13

knowing 57:20 knowledge 103:2 known 49:9,10 kotch 5:6 kslaw.com 4:19 <hr/> l <hr/> lab 94:23 label 38:8 labeled 48:22 49:19 66:15 laboratories 98:15 labs 21:10 lady 103:10 lambda 43:19 43:19 44:5 46:20,21 55:9 61:10 114:6 language 18:6,7 large 44:20 larger 26:9 largest 25:11 late 109:2 lateral 65:13 laugh 9:7,21 52:10 53:9 72:4 88:16,17 89:21 99:11 106:1,9 107:3 114:23 116:7,14,17,20 117:1 law.com 5:10 lawyer 8:23 88:18	learn 41:21 leaves 39:18 left 25:14 26:6 leigh 4:5 leigh.odell 4:9 len 106:5 length 70:20 89:15 letter 100:7,15 levels 16:9 levy 80:22 liability 1:8 life 32:21 102:23 light 12:11 22:17 23:9,13 26:14,22 28:4 28:22 30:14 47:16 49:7 59:20,23 73:17 75:9 85:2 95:4 103:23 liked 49:9,10 limit 92:12,14 limits 62:10,11 line 39:6,19 40:3 41:7 52:19 54:15 55:10,19 56:15 81:21 83:4 118:3,5,7 118:9,11,13,15 118:17,19,21 118:23 liquid 70:1,20 102:13 104:10 104:10,18	list 28:8 91:6 listen 77:11 literature 35:9 36:1 litigation 1:9 17:8,9 107:7 little 27:14,15 36:18 39:21 40:2 41:24 44:3 45:5 49:16 50:13,15 52:12 55:6 76:21,21 80:18 91:22 94:14 lizardite 92:5 llp 2:14 3:17 4:14 locations 61:11 long 10:4 60:10 102:23 109:3 longer 11:6 71:18 109:20 longo 33:17 34:13,14 38:24 45:22 47:20 50:4 53:22 55:2 56:9,23 58:10 59:9 62:18 65:1 67:2 68:12,18 76:24 77:11 78:22 79:2,7,9 79:11,15,21,23 80:10 81:7,11 82:2 86:2 87:15 98:20 103:22 106:13,22	longo's 33:12 76:15 115:19 look 13:11,15 13:19,21 14:7 23:8 24:1 29:17 31:9,21 35:12 40:24 41:2 47:18 48:1,8 59:2 61:14 76:14 82:18 86:17 looked 7:21 8:11,12 10:16 10:18 11:1 12:14 14:5 15:1 49:7 63:23 75:5 86:14,16 93:15 108:18 109:18 looking 12:9 14:13,19 15:11 32:23 33:4 35:10,10 36:1 37:13 50:14,16 50:20 51:7 55:18 57:5,8,11 91:17 92:3 95:16 looks 36:22 lot 15:8 20:4 30:8 34:21 48:16 62:7 96:7 96:22 loved 49:7 low 16:9 lunch 116:24
---	---	--	--

[m - middlesex]

Page 14

m	63:1 65:22	meagher 2:14	105:2 109:22
m 3:5,7	67:12,15 70:8	mean 13:22,23	methodologies
ma'am 10:2	70:10,16 71:13	20:3 27:20	14:3 47:9
made 14:1	73:9 98:15	28:15 29:19	methodology
18:13 39:3	match 90:22	32:22 37:11	15:21 33:17
42:21 65:22	91:11	38:3 41:14 44:1	44:14 45:21
majority 25:17	matched 90:22	44:3 52:11 53:5	53:22 68:11
make 15:8 18:7	material 10:24	53:6 62:2 63:6	81:11,13,18,21
19:6 43:16 48:7	11:1 13:14,15	68:24 80:4	82:2,16 83:6,10
59:3 88:3,13	13:16 28:1	82:15 86:7	84:3,8,19 85:16
90:2 92:19 96:7	30:10 31:1 32:1	94:22,23	99:21 100:20
101:10 108:17	32:13 34:6 35:1	111:12	102:15,18
making 31:18	41:22 63:9 66:4	means 63:7	106:13,21
37:9 59:24	69:24 72:20	measure 33:2	methods 12:8
66:19	82:20 91:9,12	82:21	14:9 27:4 34:13
manufacture	92:4 111:14	measured 39:4	35:21 37:24
21:17	materials 8:3	measurement	44:8,8 59:9
maple 3:8	16:21 18:24	65:19	83:15 98:14
march 120:24	20:5 21:8 30:22	meet 8:14	99:14
mark 112:10,14	30:23 31:21	78:24	michelle 3:18
112:17	32:4 62:5,17	meetings	80:22
marked 24:14	67:1 90:24 92:2	100:10	microphotogr...
113:4	matter 21:15	member 100:9	47:7
marketing 1:7	45:15 70:22,24	memory 20:1	microscope
maryland	95:23 119:6	mention 97:2	16:4,6 28:10
12:16 64:13	maximize 25:5	mentioned	30:14 47:19
105:24 110:7,9	mccrone 61:4,7	65:17	48:2,8 49:2,22
110:13 116:11	75:17,23 76:11	merit 2:22	63:17
116:19	76:14,20 95:16	method 15:13	microscopy
maryland's	95:17 97:3,7	20:14 22:16	12:11 22:17
64:5,9 75:7	mccrone's	33:12 50:4	23:9,13 26:23
mas 1:6 17:1,16	63:14 95:6	56:10,12 59:16	28:22 73:3,17
19:7 42:9 43:9	mcdevitt 5:5	67:16,19,22	75:10
53:1 57:16 58:2	mdl 1:5 3:3,16	83:5,8,21 87:18	middlesex
58:22 60:24	4:3 7:16 24:13	100:8,8,12,20	76:23
	90:1 107:16	102:21 104:19	

[mill - observation]

Page 15

mill 70:18,19 71:1,2 milling 70:21 71:7,14,16,21 71:24 72:10,16 72:18 93:9 94:2 94:10 mills 72:17,17 102:2 mine 21:20,22 64:17 65:4,11 65:12 70:14 71:22 97:24 mineral 28:16 29:12 30:5,16 38:14,20 39:1 41:6 53:16 54:3 57:20 58:7,20 71:3,16 72:15 101:24 102:18 mineralogical 38:15 mineralogist 103:10 mineralogists 60:8 102:22 103:2,7 mineralogy 30:17 38:19 65:21 116:9 minerals 29:20 29:21 30:8 31:6 31:23 38:7,16 38:19,21 62:5 64:21 65:14 71:8 104:20	105:2 mines 21:16 72:16 98:8 101:24 mining 64:20 72:19,19 minus 54:6 minute 9:4 108:16,16 minutes 69:6,7 69:10 101:6 105:7,10 misstates 19:2 41:12 82:12 108:12 111:21 mistake 41:10 41:14 mode 53:9 moment 81:5 monday 1:16 2:8 montgomery 4:7 months 63:24 108:3 morning 7:11 mounts 14:1 move 81:19 mparfitt 3:22 multi 91:14,14	names 8:22 natural 102:3 nature 98:13 necessarily 23:2 29:22 35:1 95:2 111:23 113:19 need 16:4 23:7 23:24 30:8 40:1 47:18 48:1 49:1 49:22 54:1 71:11 needed 31:3 54:2 negatives 89:9 89:11 neither 120:13 120:15 never 40:13,18 41:17 42:23 58:11 73:20 74:24 76:10 79:10 99:19 101:3 116:18 116:20 new 1:2 2:16 4:17 76:23 107:12,13 night 79:8 nitrogen 70:1 70:20 nj 3:9 5:8 nods 26:2 105:5 notary 2:22 120:4,21	note 45:7 106:18 notebook 112:7 112:14 notes 79:19,20 notice 2:20 noticed 18:5 number 6:7,19 10:7 28:9 39:1 90:7 numbers 67:23 nw 2:16 3:19 ny 4:17
			o
			o 7:1 o'dell 4:5 oath 119:13 object 33:8,22 99:16 objection 15:15 17:24 26:20 29:9 34:19 36:5 40:14,17 41:11 73:23 74:2,14 74:15 75:3,18 80:1 82:5,11 84:11,22 87:6 87:19 88:4,14 88:24 90:4 94:5 95:10,18 96:13 98:22 100:22 107:8 108:11 111:20 114:14 observation 55:8 56:15

[observation - own]

Page 16

81:19 83:3 observations 63:15 98:18 observe 57:1 observed 61:1 81:16 observing 60:8 79:18 obtain 29:14,23 44:23 obtained 44:24 58:5 occasionally 86:23 occur 91:23 offer 119:12 offered 81:7 offering 56:19 60:1 offices 2:12 oh 8:11 24:16 37:5 78:17 101:15 oil 39:4 40:8 41:1,3,10,15 44:4 52:2,3,5,6 52:15 57:11,13 58:14 66:15 81:18 82:23 83:3 90:21 91:12,14 oils 36:20 37:9 38:7 39:1,11,16 40:1,9,10,16,19 41:18 42:22 43:3 44:2 57:8	57:17,24 58:6 58:12,21 59:3 60:9 91:8,11 106:11 okay 7:22 8:2 8:14 9:19 10:8 11:8 14:12 16:17 20:24 21:4 22:11 23:4 24:4,11,22 25:1 25:15,19,24 26:11 27:6 28:3 28:8,18 35:8 36:13,16,24 37:1,2,7 38:2,6 38:23 39:7 40:5 41:9,24 42:5,15 43:8,16 44:13 45:4,11 46:7,24 47:8,13 49:24 50:3,10 51:4,22 52:5,19 53:10 53:13,21 55:22 56:8,17 57:3,14 57:23 58:17,18 59:8,23 61:20 62:14,24 63:12 63:19 65:16 66:2,9 68:8,23 69:4 70:22 71:6 72:13 76:8 77:20 78:5 79:10 81:6,10 85:12,14 86:1 86:13 87:17 89:6,6 90:12	93:1 96:18 97:6 99:2,12 101:5 102:5 104:18 105:11 106:20 107:19 108:6 110:12 112:16 115:16,21 116:21,22 once 85:13 ones 49:21,21 operating 67:5 opinion 14:17 23:4,21 26:19 33:10 34:16 53:15 56:19 57:10,12 61:21 62:15 82:2 92:21 97:22 102:5 opinions 17:18 28:5 44:17 45:23 46:17 60:2 67:2 68:12 81:7,12 83:9 99:4 115:23 opportunity 7:18 optic 29:20 30:1,4 optical 16:11 27:4 30:17 34:7 38:15,18 42:9 43:9,13,18,21 60:7 63:1 65:20 74:20 82:19 116:9	orange 27:14 45:8,12,17,18 49:9,21 orangey 47:16 order 15:5 16:21 31:4 40:22 47:19 48:2,7 71:12,22 81:11 84:20 88:13 90:2,18 100:20 104:11 ore 95:1 organic 68:2 orientation 29:23 60:11 61:23 62:3,8,12 oriented 62:6 original 88:11 88:22 outcome 120:17 outside 86:10 overbroad 28:23 29:5 48:13 50:23 52:8 68:20 75:19 82:6,12 98:1,23 99:6 102:20 103:4 104:24 107:1 109:7 115:5 own 13:7 14:23 15:4 16:14 19:22 20:12 33:18 43:14 44:8,15,16
--	---	---	---

[own - placitella]

Page 17

45:23,24 46:3 46:16 47:10 50:6 59:4,24 60:1 63:14 67:2 68:12,17 77:15 77:20 85:17 111:17	42:13 51:6,7 72:19 75:7 95:1 98:10 particle 29:16 43:23,24 48:22 49:18 61:18 72:22 80:13	perjury 119:1,5 perpendicular 42:11 43:20 44:4 61:10 persists 71:8 personal 5:3 12:17 114:19 114:19 115:13	piece 68:2,3 pinned 25:10 place 23:18 103:13 120:10 places 96:22 placitella 3:4,5 6:3 7:10 9:18 15:19 17:3 18:4 18:17 19:9 20:19 24:20 25:1,7,15,19,23 27:1 29:2,6 31:13 32:16 33:9 34:9 35:3 35:23 36:12 40:15 41:8,23 45:3 46:6 48:11 49:3 51:3 52:14 54:12,24 58:16 59:14,22 66:8 66:22 68:22 69:11,19 73:24 74:5,23 75:12 75:21 76:19 77:12 80:6 81:24 82:7 83:7 84:6,17 85:9,24 87:11,24 88:9 88:19 89:5 90:6 94:12 95:14,22 96:17 98:4 99:1 99:9,18 101:2 102:24 103:8 104:17 105:3 105:18 106:6 106:19 107:4
p	particles 45:16 45:17 46:5,9,18 48:24 49:8,20 57:18 60:8,9 61:21 62:15	phd 1:13 2:12 6:2 7:3 119:19	
p 7:1 page 6:2,7,19 24:23 26:7 28:8 36:19 38:5 39:10 42:2,3 46:22 52:22 55:22 57:3 58:17 60:4,23 60:23 62:20 67:10 69:20 118:3,5,7,9,11 118:13,15,17 118:19,21,23 paid 15:14 77:20,23 paper 61:17 papers 84:5 paragraph 26:10 45:6 parallel 42:10 43:19 44:3 53:17 57:16 61:10 parfitt 3:18 9:8 106:2 117:10 part 11:19 26:21 34:13	particular 33:5 49:14 94:2 113:24 114:6 particularly 20:4 parties 120:14 partly 77:17 past 114:12 pasternack 3:6 pc 5:5 pcpc 5:3 penalty 119:1,4 people 32:24 51:180:24 115:10,11 people's 114:17 percent 80:24 103:23 percentage 105:9 perfectly 117:1 period 102:23 109:3	photo 51:7 52:1 photograph 50:9,11,21 51:8 57:13 87:23 88:2 photographs 110:15 113:12 photography 89:14 photomicrogr... 13:2 photomicrogr... 12:24 phrase 51:12 pick 72:11 picture 47:8,9 47:11,14,24 48:20 49:11 50:3,5,7,16 pictures 13:5 27:13 48:4 49:15 66:14 89:8 111:1,2	

[placitella - properties]

Page 18

107:12,17 108:5,14 109:24 112:1 112:13 113:6 114:8,21 115:15 117:8 plaintiffs 3:3 3:16 4:3 plan 89:24 platy 92:5 play 77:14 player 105:24 116:19 please 9:21 20:18 52:12 112:11 plm 13:6 14:6 14:19 15:2,22 19:10 23:16,22 24:7 35:13 72:2 72:11 90:9,16 92:23 93:4 94:18 98:20 99:14,22 101:12,17 104:13 plus 54:6 pocket 6:12 113:1 point 32:21 88:3,13 90:3 polarized 12:11 22:17 23:9,13 26:22 28:10,22 30:14 75:9 95:4	polarizer 26:10 position 23:8 48:6 possession 64:12 possibilities 27:17 55:7 possibility 92:3 possible 66:19 71:15 94:1 101:10,13 possibly 27:18 potentially 65:8 powder 1:6 13:8,11 14:20 16:14 21:17 33:21 70:7 75:2 75:6 90:16 power 69:3 powerpoint 87:13,14 110:19 practice 60:7 60:20 practices 1:7 preceding 19:8 preparation 8:3,15,20 16:18 76:9 106:12,16 prepare 10:4 prepared 109:14 preparing 9:23 16:21 65:1 106:22 115:17	presence 16:1 27:24 28:11,14 31:17,22 32:5 73:10,15 74:19 75:14 91:17 92:16 present 31:23 44:1 92:22 93:3 93:5 presentation 110:19 presented 63:1 pretty 68:24 prevent 45:13 previously 65:2 principle 89:20 principles 106:24 printed 89:8 prior 7:19,23 probably 19:24 78:4 79:16 93:23 97:5 99:8 106:4 problem 25:20 39:12 59:15 83:10,14 86:21 87:2 89:7 106:17 procedure 65:20 proceed 23:18 proceedings 7:17 process 70:7 71:17,21,24	72:10,17,18 93:10 94:2,11 94:24 104:7 processing 101:24 102:1 produce 41:5 produced 33:12 33:17 37:14 product 10:10 10:14 12:4,10 19:15 20:7,22 34:17 35:13 71:22 72:2 75:17 93:10 109:5 products 1:6,8 5:3 20:2,18,21 21:1,12 72:15 97:8,11 professional 33:18 35:5 37:22 55:18 proof 27:9,11 proper 26:22 29:22 87:17 88:20 89:10,18 99:21 properly 40:24 properties 16:11 28:9,19 29:3,11,13,15 30:10,13,15 31:18 32:7,15 32:18 33:4,11 34:1,8 35:12 36:4 38:18 62:7
--	--	---	--

[properties - refraction]

Page 19

65:8 82:19 proposition 37:3 prove 92:8,9,10 92:14,16 provide 11:14 18:20 38:20 44:16 50:3,5 52:6,13 83:1 84:20 98:6 102:6 115:24 provided 10:7 18:21,24 27:23 28:1 34:5,20 42:11 43:21 45:14 58:23 59:13 66:5 71:10 79:2,7 84:15 provides 53:22 61:9 public 2:22 120:4,21 publication 61:14 published 26:18 27:5 35:8 36:1 38:1 60:20 purchase 11:3 purchased 10:23 16:13 108:21 109:18 purpose 11:2 13:23 36:15 purposes 7:14 24:18 25:24	pursuant 2:20 put 15:20 21:11 41:4 76:2 84:24 90:21 115:8 putting 85:4 q qualification 20:10 qualified 28:18 qualifiers 115:9 qualities 30:9 quality 114:19 question 31:14 32:3 43:4 44:6 52:11 58:7 72:4 85:13 87:9 93:12 98:5 100:15 105:22 questioning 111:11 questions 48:16 49:4,17 78:22 101:6 105:9 117:7 quickly 18:12 18:19 quite 48:4 r r 7:1 range 62:9 raw 33:12,17 34:14,21 44:7 59:13,15,16 60:2 83:17,19 83:22 84:14	89:9 98:19 99:4 110:12,14 reach 27:22 53:23 58:1 68:12 71:12 81:11 reached 95:16 reaching 82:3 read 26:8 119:5 119:7 readily 73:2 ready 62:22,23 really 12:22 14:24 18:11 20:6 27:19 36:14 39:24 40:23 55:5 89:17 100:2,16 realtime 2:21 reason 27:12 reasonable 93:21 103:14 103:17 reasons 78:13 recall 39:2 77:1 78:7 90:10 113:13 received 19:7 recent 107:15 115:17 recess 69:16 105:15 recognize 54:18 recognized 52:5	recollect 68:6 101:4 107:23 recollection 20:13 22:15 100:16 recollects 68:7 recommenda... 36:20 67:16 68:16 recommended 37:1 85:6 record 12:6,23 21:24 24:18 34:10 40:21 69:15,18 105:14,17 117:5 records 22:4,7 red 3:9 27:15 80:18 reduction 69:23 reference 30:17 38:8,12 79:1 referenced 6:18 61:19 referring 18:11 24:19 38:13,22 61:8,15 67:19 76:5 refine 104:10 refraction 38:8 38:21 39:6,14 41:7,22 43:2 46:21 49:16,20 53:17 54:8,15
---	---	---	--

[refraction - samples]

Page 20

55:3,10,12,15 56:2,3 58:22 62:9 63:8 70:2 71:14 72:20,21 80:13 81:20 82:21 91:1 regard 84:4 regardless 27:21 33:10,16 34:12 66:23 68:9 72:22 registered 2:22 120:4 reilly 5:5 rejected 104:6 relation 79:21 107:7 relationship 58:12 relative 120:13 120:15 reliable 16:10 relief 91:2 rely 59:10 84:20 relying 62:17 remember 9:1 9:2,20 10:6 12:22 49:13 55:3 67:22 70:19 76:3 81:4 87:12 111:15 remind 9:11 remove 68:2 renzi 3:7	report 6:9,10 6:11,20 8:6 9:24 10:5 14:4 14:18 15:5,20 16:18,22 17:13 17:19,23 18:5,6 18:8,12,18 19:1 19:6 24:13,19 26:12 28:4 34:13 36:14,16 38:23 40:7,9 42:3 55:23,24 62:4,21 69:21 76:10,15 86:14 86:18 90:8 91:6 97:2,3,13,14,15 98:10 107:13 107:16,16,22 107:24 108:4 108:24 109:2 109:14 110:18 111:4 112:23 112:24 113:1 113:15 115:19 116:1,3 reported 1:23 58:22 109:10 reporter 2:21 2:22 25:2 69:14 69:17 105:13 105:16 117:4 120:1,4 reports 8:11 17:1,8,12,22 19:8 34:5 57:16 65:23 67:12	77:19 106:16 109:15 112:12 115:17 representatives 100:1 request 111:24 require 37:8 90:8 required 56:3 respect 89:22 result 12:6 results 11:14 12:3 42:23 59:3 76:11,14 90:9 97:8 retained 107:6 109:6,9 110:21 110:23 111:9 revell 38:18 review 7:19 reviewed 8:3,6 8:8 rid 103:24 104:3 right 11:5 15:3 25:16 44:13 46:13 54:18 56:22 63:21 66:23 67:8,10 69:12,20 77:3 81:4 82:1 84:18 96:23 97:16 98:24 99:15 106:7,10 108:9 109:19 112:2 112:13 114:9	114:22 115:1 117:1 rls 1:6 rmh 5:10 rmr 1:23 120:21 road 96:5 rod 72:17 role 77:7,13 rotate 60:10 roth 3:4 roughly 108:4 routine 32:11 routinely 74:17 run 90:18
s			
s 3:6 7:1 sales 1:7 sample 10:22 11:4 12:15 23:10 28:20 29:4,8 32:18 33:5,6,13 36:2 37:13 65:9 71:5 87:18,22 90:15 94:2,4 103:24 106:12,16 109:18,21 samples 10:16 10:19 11:22 14:13 19:22 28:11 49:13 67:13,24 73:10 75:1,5,24 85:5 102:18,19			

[samples - small]

Page 21

106:22 108:10 110:2,3,8 111:17 save 105:10 119:8 saw 42:24 76:22 78:5,21 83:19 88:6,7 106:15 113:11 saying 77:19 80:8 84:10 86:22 87:2 114:4 says 42:8 56:6 63:21 67:12 116:8 scientific 15:12 52:7 56:10,12 87:17 88:12,22 89:20 93:21 102:17 104:19 106:23 scientifically 92:11 scientist 34:15 99:5 scientists 50:18 115:3 screen 25:11,18 39:10 42:6 second 7:15 17:13,23 24:12 51:24 52:3 112:23 secondhand 104:5	section 42:5 45:9 see 8:21 9:6 10:20 13:16,24 15:1,8 23:10,11 23:12,14,15,21 24:5 25:6,8,11 25:13,14 26:6,7 26:9,16 38:10 42:5,13 43:11 45:9 47:1,17 49:2 50:1,11,12 50:17,19 51:1,5 51:13,14,17,19 51:20 53:3,19 60:12 61:5,14 61:24 62:12,13 63:4 65:18,24 67:7,17 70:4 73:6,12 79:18 80:16,18 89:20 90:18,23 91:3,7 92:4,23 93:6,8 93:10 94:17 95:4,5 98:2 106:7 113:19 114:24 115:11 117:2 seeing 25:3,20 47:14,15,16 80:15 114:11 seems 71:13 seen 64:22 102:1 sell 11:9	selling 11:6 semester 116:10,12 send 32:24 sense 34:3 sensitivity 114:18 sent 20:4 sentence 43:11 57:6 63:22 separate 94:8 separated 93:7 separating 105:2 separation 102:13 104:11 104:18 series 38:17 57:17 serpentine 13:16 14:6,8 15:1,9 92:2,5 set 14:4 29:13 30:24 62:10 98:15 120:10 several 7:21 14:1 shades 47:15,16 50:12 sheet 118:1 119:11 sheets 17:16 42:10 43:10,13 43:18,21 shelf 11:10 19:23	shot 39:5 show 94:3 96:12,16 showed 39:14 60:2 96:24 100:6 shows 47:11,23 88:23 side 27:16 39:20 40:3 signature 117:12 120:20 signed 119:15 significant 28:10 similarity 46:4 simply 15:8 87:22 single 20:14 41:18 44:4 81:17 93:6 sit 19:19 sitting 48:15 49:5 78:5 six 63:23 108:3 size 29:16 69:23 72:10,22 80:13 skadden 2:14 skip 36:14 sky 51:19 slate 2:14 slide 60:9 62:6 slightly 114:7 small 6:8 16:8 57:19 58:7 80:16 112:21
--	---	---	--

[social - system]

Page 22

social 79:4	52:9 54:23	statements 108:10	
sold 20:9	100:24 103:5	substance 36:16	
somebody 51:11 114:22	113:22 115:6	substantive 18:15 79:5	
114:24	spent 9:22	sufficient 34:4	
sons 9:5	spike 13:14	34:14,22 43:14	
sorry 9:16	109:22	44:15 47:10	
12:20 20:20	spoke 108:19	53:22	
22:24 27:2	stain 63:9 65:1	suggest 88:22	
36:24 42:16	staining 40:23	98:3	
64:8,8 67:22	41:19 43:2	suggesting 87:5	
82:22 116:23	44:23 45:12	suggestion 27:20	
sort 81:3 92:6	46:9,19 47:7	suggests 65:13	
sound 84:19,24	48:24 53:2	suite 3:19 5:7	
sounds 53:8,8	55:16 57:15,24	supplied 17:1,5	
98:24	70:3 80:17	62:18 115:18	
source 26:14	81:17 82:23	supply 16:20	
49:7 61:3 64:1	standard 15:21	75:16	
97:24 98:8	22:22 23:1,5	supported 61:2	
sources 21:4	26:19 35:9	suppose 96:11	
85:2	37:19,23,24	sure 15:8 21:12	
spalding 4:14	60:21 65:20	35:17 43:16	
speak 8:19	standards 14:4	52:16 69:11	
speaker 25:10	15:4 36:7 37:8	70:15 71:5 72:4	
speaking 55:11	37:18	77:18 92:19	
72:18 92:11	start 70:16	93:13,17,19	
specific 37:2,20	started 109:15	94:7 101:10,22	
42:10 52:12	state 17:9 38:5	105:19 108:17	
61:13 71:3,4,4	46:11 52:22	112:18 114:16	
71:5 79:4 90:12	56:22 57:14	sworn 7:5	
107:15	60:23	120:6	
specifically 8:3	stated 68:4	system 27:19	
8:13 12:12 32:5	83:24		
36:7 37:18 72:8	statement 26:18 27:21		
speculation 28:24 50:23	63:13 72:14		
	116:5,15		
		subject 114:10	
		115:2	
		subjective 33:3	
		subsequent 9:24 10:1	

[tab - think]

Page 23

t	98:21 99:15,22	74:21 75:9,16	testimony 19:3
tab 112:22,23	100:12 101:11	75:23 76:14	24:9 41:12
112:24	101:16 103:3	90:8,12 92:16	72:23 79:1,6,21
table 17:15,17	104:1,12 107:7	92:17 94:17	81:8 82:12 86:2
61:9	110:7	temperature	92:20 98:7,17
tabs 6:8,14	talcs 32:23,24	49:11,12,15	101:8 108:12
112:22 113:3	talcum 1:6	65:17,20,22	111:21 113:11
take 10:4 39:16	talk 13:4 36:19	66:3,15,20,24	120:9
41:24 67:1	52:2 65:16	68:5 71:4 85:4	testing 12:3,8
68:10 69:2,7,8	79:14	85:5	13:15 14:23,24
77:5 79:19,20	talked 80:12,15	temperatures	15:13 19:20
88:11 101:5	80:21	67:13 68:1	22:2,3,5,14,15
105:10	talking 43:17	terms 12:24	22:21 90:8 97:8
taken 7:16	70:10 86:21	20:2,10 51:13	99:14,14,21
49:11 65:9	97:12	test 11:21 12:12	110:13,16
110:15,17	talks 62:21	13:7 20:14,24	111:18
119:6 120:9	67:24	21:14,19 57:17	tests 13:1 20:12
talc 19:11,12,15	tap 60:9	76:11,14 90:16	112:5
19:20 20:6,14	taught 40:4	90:18 109:17	text 38:20
20:17,21 21:1,5	55:14 106:5	109:17 111:8	60:21
21:14,15,15,19	teach 30:13	111:17	texts 38:9,12,19
22:4,15,21,23	116:9	tested 10:9,13	thank 7:13
23:6 28:20,21	teacher 53:8,9	12:2 13:10	24:21 105:4,12
31:16 32:5,11	tease 94:14	101:19 108:9	117:2
32:12,18 33:13	techniques	108:15 109:5,9	thing 17:4
35:11,11 36:2,8	26:22 97:13	110:8	23:12 36:18,22
37:16,18,20,24	tell 8:2 9:19	testified 7:5	43:17 65:14
45:17 49:1	48:17 81:10	75:4 79:11,15	92:6 93:5
52:24 54:5,9,9	96:23 111:15	testify 80:10	103:15,17
54:11 55:4,7,12	telling 30:5	82:8 93:20	things 31:1
61:22 62:15	tem 14:12,16	97:17 98:12	36:18 80:8 85:7
75:24 90:22,22	14:18 15:6,18	106:21	89:16 91:5
91:1 92:22 93:4	15:22 16:3,4,10	testifying 76:24	114:11
94:17 95:8,17	16:15 22:18,21	97:9,10,12	think 9:4,22
97:18,23 98:7	23:5,17,18 24:1	98:13	10:21 19:24
	24:8 73:4,9,16		31:10 36:6,21

[think - upper]

Page 24

37:17 54:3,6 55:13 61:19 70:17,17 72:12 76:1,13 79:16 80:9,24 82:14 83:5 85:22 86:3 86:15 87:3 88:21 93:23 94:19 95:2,2 97:2 99:7 100:3 100:3,6,15 101:21 102:2 103:12,18,18 103:20 105:8 107:9 113:23 115:7,10,11,13 116:21 thinks 71:18 third 52:2 112:24 thought 17:21 18:1 27:16 77:19 80:23 81:1,2 three 10:3 37:1 37:8 39:22 40:1 40:10,16,19 112:12,21 threw 22:8 throw 22:11 time 1:17 2:9 9:22 15:22,24 18:22 19:8 22:6 22:20 28:19 29:4 32:17,22 41:19 63:19	70:21 71:4 77:24 78:3 89:15 99:3,10 102:23 105:24 108:10,23 109:3,13,14 120:10 times 90:7 97:3 today 7:12,14 7:20 8:9,10 16:18 19:19 75:22 113:8 116:8 today's 8:4,15 9:23 together 40:22 41:5 42:23 told 56:13 76:7 85:1 100:3,4 took 13:3 48:6 76:2 96:24 111:1,2 top 25:13 totally 114:3 tough 106:4 toward 109:19 trace 64:21 65:14 training 50:19 transcript 6:16 7:19,24 119:5 120:8 transmission 73:3 tremolite 13:3	tried 18:13 true 19:24 34:18 49:23 80:9 110:10 114:13 116:11 119:8 truth 111:15 try 14:12 29:17 31:22 105:7 trying 16:1,8 25:3 39:7 40:5 40:6,11 68:8 69:3 92:14 94:13 tuesday 18:21 18:22 19:1 tungsten 26:14 turned 27:17 twin 9:5 two 10:3 15:20 17:7,12 19:21 20:12 27:8,16 37:1,8 39:10,13 39:13,16,21 40:9,16 41:20 42:23 43:3 44:2 47:17 57:8 58:5 58:12,20 59:3 61:16 75:5 105:10 110:3 110:17 116:10 type 13:17 28:4 u uh 28:2 37:1 42:7,14 110:17	ultimate 99:3 ultimately 22:22 uncertainty 39:18 under 15:4 16:3 16:6 24:1,7,8 47:19 48:1 58:7 63:17 70:1 90:16 119:1,4 119:12 understand 25:4 36:16 39:8 40:6,11 41:14 42:16 44:22 49:8 68:9 80:19 85:3 92:20 94:14 96:20 101:10 104:4 understanding 86:22 87:1,2 119:11 understood 80:23 united 1:1 11:7 university 12:16 22:9 64:5 64:9,13 75:7 110:6,9,13 116:11 unknown 28:14 29:12 30:20 31:8 32:13 unusual 81:3 upper 26:6
--	--	--	---

[use - witness]

Page 25

use 12:8 13:6 13:13 14:12 15:6,12,18,22 15:22,22 16:2 16:15 21:8 22:16,18 28:19 29:3 31:17 32:6 32:14 40:16,23 57:15,24 58:4 61:17 70:12 73:9,16 75:9 80:21,22,24 84:13 90:18 109:21 used 10:22 14:9 19:10 20:5 21:16 25:4 28:5 32:17 33:1,17 34:1,14 39:1,10 40:8,8,10,13,18 40:19 41:10,15 41:17 42:23 44:14 45:22 47:9 50:4 52:15 53:22 54:13 55:7 59:9,16 61:18 70:8,14 70:19 75:9 81:11,14,19 82:3,16 83:8,21 84:19 85:16 97:13 102:12 102:15,22 103:1,12,22 106:11,13,21	uses 71:21 using 14:6 20:14 21:11 23:22 25:3 28:10,21 30:14 35:12 36:20 41:22 44:7 59:12 68:11 83:15 85:4 92:23 93:4 94:17,18 99:14 99:22 101:17 104:13 utilized 26:14 utilizing 44:23 54:7	variable 30:5 67:14 variation 64:22 65:13 66:3 115:14 variations 61:1 61:22 64:21 113:20 varies 114:18 various 38:24 47:15 50:12 75:23 vary 62:11 64:19 verbatim 120:8 verify 90:9 vermont 21:20 21:22 22:15,21 22:23 23:6 version 26:7 versions 27:8 versus 15:13 93:11 94:3 vickery 1:23 2:21 120:3,21 view 25:2,4 violation 89:20 viscomi 77:4 90:1 visited 102:1 voltage 27:17	walk 90:17 want 9:10 16:2 21:11 24:11 27:7 36:13 46:22 47:4 67:6 69:2,6,7,8 78:20 92:19 101:10 112:20 wanted 21:7,12 61:14 77:17 78:19 91:4,10 100:21 111:16 111:17 washington 2:15,17 3:20 water 96:21 way 16:10 23:17 27:18 31:15 40:4 41:20 57:7 60:18,19 66:9 69:2 75:13,15 77:20 83:2 84:8 86:20 90:22 93:22 97:17,22 102:8 106:23 we've 69:5 weeks 7:21 76:22 116:10 went 9:16 43:1 85:10 whatsoever 97:11 wisdom 114:11 witness 9:12,15 15:17 16:24
	v		
	vague 16:23 18:9 28:23 50:23 52:8 58:3 59:18 77:9 80:2 80:15 87:7,20 102:20 104:14 104:24 106:14 107:2 108:11 113:21 114:15 valid 102:17 104:19 105:1 106:23 validity 84:8 value 42:12 83:3 values 42:10 variability 61:2	w	
		wait 108:16,16 waived 117:12	

[witness - zoom]

Page 26

18:1,10 19:5 20:17 24:22 26:21 29:1,10 32:10 33:23 34:20 35:17 36:6 40:18 41:13 44:19 46:2 48:14 50:24 52:10 54:1 58:4 59:12 59:19 66:7,13 68:21 69:10 74:3,16 75:4,20 76:17 77:10 80:3 81:16 82:13 83:13 84:12,23 85:22 87:8,21 88:6,16 89:2 90:5 94:6 95:12,20 96:15 98:2,24 99:7,17 101:1 102:21 103:6 104:15 105:1 106:3,15 107:3,21 108:13 109:8 111:22 112:18 113:23 114:16 115:7 120:6 word 77:5 84:24 86:23 97:3 words 20:22 78:19 114:2 work 74:7 99:23 100:11	100:17 worked 89:13 working 99:13 100:8 109:23 works 103:19 103:20 world 31:6 61:12 102:3 write 57:21 100:15 111:23 writing 9:24 26:9 108:1 written 18:12 77:19 100:7 wrong 95:17 104:8 wrote 61:17 107:22 108:2 wukzmin 3:13 wylie 1:13 2:11 6:2,9,10,11,21 7:3,11 24:14 26:1 42:6 48:7 112:17 113:5 119:19 wylie's 107:10	years 20:3 22:13 51:8,12 76:1 96:24 yellow 47:16 50:13 51:21 115:1 yellowish 51:20 51:23 york 2:16 4:17
		z
		zero 43:19,19 44:5 46:21 55:9 zeros 46:20 61:10 114:6 zoom 3:3 4:3 5:4 8:23
	y	
	yeah 24:16 25:6 42:20 52:11 67:9 70:13 77:6 79:13 99:11 113:14 year 95:20 109:3	

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at www.veritext.com.